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MUSHROOMS

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Parts of this special edition were previously published.

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THE WIDE, WONDERFUL WORLD OF MUSHROOMS

An expert on wild food says mushrooms are versatile, magnificent—and having a moment.

BY LANGDON COOK • REVIEWED BY VICTORIA SEAVER, M.S., RD

Okay, it's true they've been around a long time. The kingdom of fungi predates us by a billion years and was largely responsible for prepping the planet for the emergence of plants and animals. But today mushrooms elicit the sort of celebrity typically enjoyed by someone like Taylor Swift or Timothée Chalamet. We're fascinated—and perhaps a bit intimidated by them. And so the kingdom is under scrutiny as never before: for its medicinal uses, its ecological remedies and its psychotherapeutic properties. We've all seen headlines along the lines of MUSHROOMS CAN SAVE THE WORLD. Like morels after the first warm rains of spring, they're the stars of books, movies and household kitsch.

It is as food, however, that these odd ingredients, neither vegetable nor meat and yet seemingly both, are most familiar—and misunderstood. Savvy cooks know that fungi, loaded with umami, are secret weapons in the kitchen, while culinary adventurers seek out the thrill of the mushroom hunt. For anyone wishing to get to know the kingdom a little better, this is as good a time as ever. Our baskets are overflowing with weird, wonderful and delicious fungi.

First, a quick biology lesson. Mushrooms are a category of fungi, along with yeasts, molds and mildews and rusts. A mushroom is the fleshy reproductive body of the fungus, sometimes called a fruiting body. Think of it as analogous to a cherry on a tree. Typically, a fugus lives as a collection of nearly invisible rootlike filaments underground. When the time is right, the fungus produces a mushroom to help spread its microscopic seedlike spores.

These bewitching blooms in the woods have been viewed throughout history with trepidation and delight. A few can kill you—like the Death Cap, implicated in the assassination of a Roman emperor. Others might make you feel one with the universe, such as various species of psychoactive psilocybes. And then there are those for the table. They come in myriad shapes, sizes and colors. There's an edible mushroom that looks like a frozen waterfall and another that imitates sushi.

In the kitchen, mushrooms are as versatile as meat, and they're a nearly perfect substitute in vegetarian dishes. They can be sautéed, braised, roasted, grilled, flash-fried in a wok or slow-cooked in a Crockpot. Aromatic mushrooms like matsutake (mycologist David Arora calls its scent a "provocative compromise between Red Hots and dirty socks") are used to infuse delicate soup broths, while large, robust mushrooms like porcini and portobellos can be simply tossed on the grill.

Though most mushrooms should be thoroughly

Chicken Stew with Turnips & Mushrooms at eatingwell.com/mushroomstew

When searching for mushrooms in the wild, inexperienced foragers should hunt alongside an experienced and trusted mycologist.

cooked, there are a few (hello, truffles!) that work miracles thinly shaved over warm foods. In general, it's a good idea not to crowd a pan with fungi. Mushrooms are about 90 percent water; as they heat up, they release their liquid content. Too many mushrooms too close together and you end up with a mushy mess. Like meat, they're often at their best when slightly browned around the edges. Medium heat is usually good for the stovetop.

As in the plant and animal kingdoms, there are wild and domesticated varieties. Some markets offer both. The domesticated varieties are mushrooms we've learned to farm, such as shiitake, oyster and lion's mane. The ubiquitous button mushrooms of supermarkets—sometimes called champignons or cremini in a marketing bid to seem unique—have been cultivated in the catacombs beneath Paris since the 1800s, and though they're perfectly delicious in the kitchen, they offer barely an inkling of the treasures to be found with a little extra effort. A home cook can have a lot of fun experimenting with the many types of cultivated mushrooms now available in local stores and farmers markets alike. Tiny enoki mushrooms, pure white with long slender stems and small caps, are perfect for homemade ramen or udon soup, in which they both garnish and add a textural component. Maitake, also called hen-of-the-woods, look like a game bird's plumage and dress up a hearty plate of fish or vegetables. The king trumpet is big, dense and full of fungal flavor; sliced and marinated, it's perfect for adding a mushroomy element to a mixed grill. And those are just a few of the cultivated varieties available in markets today. The wild varieties add a whole different patina of mystery to the fungal portrait.

For one thing, most wild mushrooms in the marketplace cannot be farmed. They must be foraged, in season, by knowledgeable mushroom hunters. This means they're ephemeral, unpredictable, sometimes expensive. Their flavors differ, too. Chanterelles are slightly fruity, for example, while lobster mushrooms, true to their name, evoke a touch of the sea. The candy cap, when dehydrated, develops an intense aroma of maple syrup that lends the mushroom to novel uses in desserts such as cookies, custards and cakes, while a beefsteak mushroom can be sliced raw like a piece of fish and served atop rice like nigiri. Regions boast their own specialties—the chestnut forests of northern Italy for porcini; the red pinelands of Japan for matsutake.

In North America, mushroom hunting is becoming a popular pastime, as it has been for centuries elsewhere around the globe. In spring, mushroom hunters fan out through the hardwoods of the Midwest in search of morels. They spot the glimmering gold caps of chanterelles in the Maine woods in summer, and come fall, they wander the tall conifer forests of the Pacific Northwest for a cornucopia of fungi. Edible mushrooms grow in city parks, suburban ballfields and mountain wildernesses. They grow on tree trunks, break through dry desert crust and decorate the rain forest floor like strange sea creatures washed up at high tide.

To find one is to take part in a drama that has captivated humanity since our earliest days. I'll gladly embark on long alpine rambles to sleuth out Rocky Mountain porcini, sometimes traveling 12 or 15 miles for that primitive dopamine hit of spotting a brick-red cap among the lupine and asters—so much more satisfying than today's social media "like"—or slog through a doghaired plot of second-growth Northwest timber chasing chanterelles.

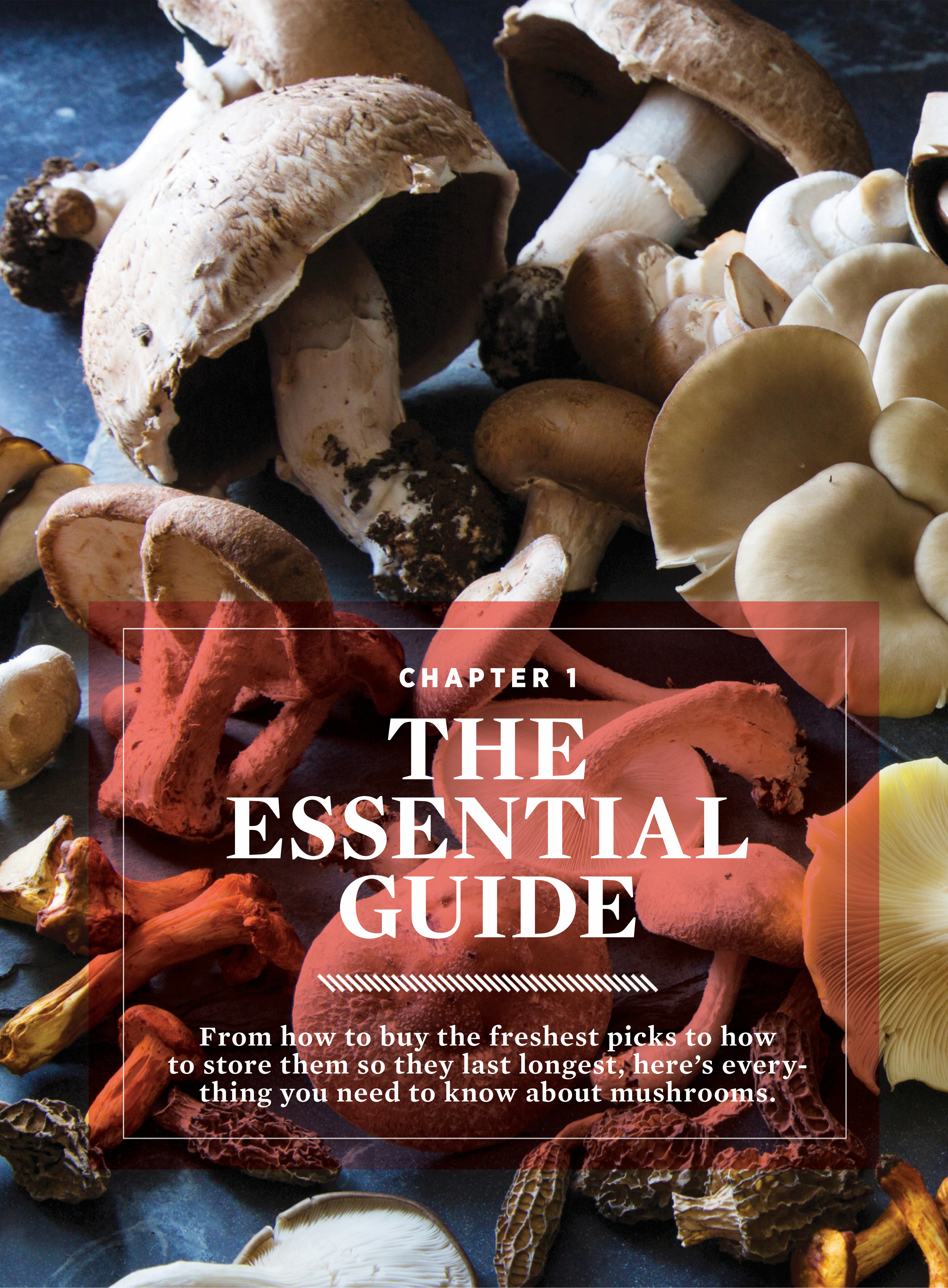
FOR THE HOME COOK LOOKING TO DIG INTO wild mushroom cuisine, probably the most famous trio of wild mushrooms—complete with continental-sounding names—would be chanterelles, morels and porcini. Golden yellow with fluted caps and ridges rather than gills, the chanterelle is one of the most popular (and populous) wild mushrooms around the world. With aromatic hints of stone fruit (chefs often hail its notes of apricot), the chanterelle pairs beautifully with a cut of pork, livens up roasted potatoes and makes a great omelet. Morels are a springtime treat, with pitted caps and a woodsy flavor that defies our vocabulary. Meaty? Check. Earthy? Yes. Smoky? For sure. I toss them in a seasonal pasta with lamb ragu and fava beans or scatter the sautéed caps on a Columbia River spring chinook. And last but not least are porcini, with that evocative name that means "little pigs" in Italian. Rich in nutty flavor when cooked fresh or pickled, they develop a deep earthiness when dehydrated that's like mainlining umami straight out of the woods.

Speaking of which: a quick note on dried versus fresh mushrooms. Each has its place in the kitchen; just make sure you know the difference. Dried porcini, for instance, are not interchangeable with fresh. The former are toasty and pungent, the latter sweet and nutty; dried porcini are best pulverized and used as a flavoring in soups, stews and gravies, while fresh porcini, with their succulent texture, are meaty enough to be a side dish on the plate or even a main course when roasted and served whole. Species such as morels and black trumpets rehydrate well, while other species, such as chanterelles, can be leathery when reconstituted.

Like a couple in a new love affair, here in North America, we are still in the exciting discovery phase. Elsewhere, people and cultures have been enamored with fungi for hundreds if not thousands of years. People from the Mediterranean region, Eastern Europe and Mesoamerica have a long history with mushrooms, and they are particularly present in Chinese cuisine. While traveling in a mountainous corner of Sichuan Province, I found a wild-mushroom marketplace that would dwarf most farmers markets in the U.S. Stall after stall, covering an area as long as a football field, boasted bins overflowing with local varieties of porcini, chanterelles and amanitas, along with other varieties that are often ignored in America, such as milkcaps, gypsy mushrooms and the slippery jacks, similar to porcini for a fraction of the price. Knowledgeable Chinese customers haggled with the sellers as the mushrooms got sorted and weighed on old-fashioned scales.

Rich in nutty flavor when cooked fresh or pickled, porcinis develop a deep earthiness when dehydrated that's like mainlining umami straight out of the woods.

Later that day, in a patch of oak woods, I found a type of shelf fungus commonly called chicken-of-the-woods, pink on top and white underneath, looking like a bunch of Frisbees impaled on the tree. We brought it to a local restaurant and asked the server to incorporate it into a stir-fry. True to form, even in China, where mushrooms have been on the menu for thousands of years, the chef came out of his kitchen with a pen and a piece of paper with an X on it. Despite the language barrier, we understood immediately. The mushroom should always be respected, especially an unfamiliar one from the wild. And so we happily signed away our lives (potentially) to savor a taste of that beguiling find. ●



CHAPTER 1

THE ESSENTIAL GUIDE

From how to buy the freshest picks to how to store them so they last longest, here's everything you need to know about mushrooms.

THE MANY LOOKS, THE MANY FLAVORS, THE MANY KINDS

With a variety of fungi available at the grocery store or farmers market, here's the dirt on the most popular mushrooms to eat.

BY COURTNEY MIFSUD INTREGLIA

CHANTERELLE

Ranging from vase-shaped to trumpet-shaped, golden chanterelles are some of the most widely available and prized wild mushrooms. Lab studies show that they contain several antioxidant compounds, including flavonoids, polyphenols and beta carotene. While more research is needed to highlight the specific benefits of chanterelles, the delicious blooms warrant a place on any table with their peppery taste and meaty texture. Wild mushrooms like these may be a challenge to find at the grocery—natural-foods stores and farmers markets may carry them, or you can order them online.

Chanterelles are best enjoyed whole—they are bite-size, and it preserves their squeaky, bouncy texture. For a simple sauté, cook them in a pan with butter or olive oil over medium-high heat, stirring occasionally, until the water they release evaporates and the mushrooms lightly brown, which will deepen their earthy flavor.

MOREL

Morels look like small spongy cones and contain a remarkably wild and woodsy flavor. Since these honeycombed mushrooms are difficult to cultivate, you're more likely to encounter foraged ones at farmers markets. While you should avoid fully washing most mushrooms, dirt and debris tend to hide in the caps' crevices, so morels need more of a bath before cooking. Fill a large bowl with cool water, add the morels and quickly swish them around to draw out any grit. Then lift the morels out of the water with a slotted spoon and pat them dry. You don't need to use many morels to get their essence: To stretch your budget, you might consider using half cremini or button mushrooms in a sauté with some morels. Use it to top some pappardelle pasta.

OYSTER

Varying in color from white-gray to light brown, dark brown and even pink, oyster mushrooms get their name from the shape of their cap, which resembles an oyster. Oyster mushrooms are cultivated year-round in most parts of the world and grow quickly, which makes them easier to find than most other wild mushrooms. Vibrant flamingo oyster mushrooms have a woodsy smell and taste like seafood. When they're cooked, the vibrant hue subsides.

Oyster mushrooms have a mild flavor and chewy texture that makes them a great stand-in in dishes that would usually feature meat or chicken. Try them as a pizza topping, sautéed in a bit of butter and thyme.

CREMINI

Perhaps the most versatile mushroom at the market, these look like white buttons but have a meatier texture and deeper flavor. Sometimes labeled "crimini" or "baby bella," cremini are found at most grocery stores.

Creminis are not quite as flavorful or large as their full-grown counterpart, the portobello. The meatiness and durability of creminis means that the mushrooms can hold up to longer cooking times than some other varieties. Quartered creminis add rich umami flavor to a braised beef or chicken stew, or they can be stuffed whole with spinach and cheese, then baked. Or sauté sliced creminis in olive oil, salt and pepper and spoon them over a grilled steak.

PORCINI

Sold both fresh and dried, porcini mushrooms are prized in Italian and French cuisine. Most commonly found in forests near the base of birch, beech, pine, fir, spruce and hemlock trees in spring and fall, these brown-capped fungi don't have gills but rather a smooth underside to their cap. Porcinis taste similar to other more common mushrooms, but they have a more intense and nuttier flavor. Dried porcini add a deep, savory note to broths and sauces and, once rehydrated, have a slightly chewy texture. To rehydrate dried porcini, steep them in just enough warm water to cover until they've softened and expanded, about 20 to 30 minutes. Drain them and reserve the liquid, which makes a wonderful broth for risotto. Or try pulsing dried porcini into a powder to rub on a steak with salt and pepper before cooking—the flavor is incredible.

MAITAKE

Also called hen-of-the-woods, maitake mushrooms have lacy layers that are delicious fried or roasted and add a particularly dynamic visual to any dish.

The bouquet-like blooms grow on the base of oak trees but can also be cultivated on farms, making maitakes available commercially. Due to their thin, flowery edges, maitakes are particularly tasty fried; try them in the air fryer, or pan-fry the mushrooms in oil on medium-high heat. Since maitakes keep their texture even when diced into small pieces, they stand out when folded into an omelet or another simple base.

These mushrooms are widely used in Japanese and Chinese cuisine, often in stir-fries, hot pots or cooked with miso butter. They can also be grilled yakitori-style—skewered and cooked over a charcoal fire.

ENOKI

Often found in bundles attached to a root, long, thin enoki mushrooms have a mild flavor and crunchy bite. They are typically sold in clusters and are widely used in Japanese, Korean and Chinese cuisine.

Enoki mushrooms grow on the stumps of trees from late fall to early spring. Farmed enoki mushrooms are cultivated in a lightless and CO_2-rich environment, which yields pale white mushrooms with slender stems, up to five inches in length, and tiny caps. Enokis are sold with an interconnected root base still attached to preserve the mushrooms for longer, but it needs to be trimmed off before using.

With their short cooking time, enokis pair well with noodles, bundled and grilled (often wrapped with bacon) or used in sushi rolls. Add fresh enoki to a bowl of ramen, pho or soba or to a hot pot and let the steaming broth quickly cook them.

SHIITAKE

Also known as black mushrooms, shiitakes are a staple in Chinese cuisine. The word black is a misnomer, though—shiitakes can be light or dark brown, and even gray when dried.

In Japanese, the word *shiitake* refers to the shii tree on which these mushrooms originally grew. They have umbrella-shaped caps with tan gills and curved, woody stems.

Shiitakes can be stir-fried with eggplant, ginger and garlic and served over cooked rice or noodles. Their tougher stems can be reserved and simmered in hot water for a rich stock or broth.

BUTTON

Widely available in any grocery store, button mushrooms are usually white or sometimes very light brown, and the caps can range in size. According to The Mushroom Council, white button mushrooms represent about 90 percent of the mushrooms that are consumed in the United States.

Often served raw in salads, the white button's flavor intensifies when cooked, yielding a juicy and meaty bite. The robust flavor pairs well as a side dish to grilled steaks or other meats. Sauté sliced white buttons with butter, salt, pepper and garlic for an easy, tasty side dish.

PORTOBELLO

The gargantuan relative of white button and cremini mushrooms, the portobello averages around six inches across, with a dark brown color and firm texture. Portobellos are widely available at most supermarkets alongside button and cremini mushrooms. Since they are so meaty and less spongy than most other mushroom varieties, they can be grilled over high heat and are often used to replace burger patties as a plant-based swap.

Portobello caps can be hollowed out and topped with cheese, tomato sauce and pepperoni to create veggie-packed mini pizzas.

SCRUB 'EM AND STORE 'EM

From bulbous white buttons to honeycombed morels, here's how to make sure your mushrooms are dirt-free and stored to last.

BY JACQUELINE WEISS

Mushrooms are standout members of the fungi family that offer an earthy flavor when used in cooking, and they can make a great meat substitute. Plus, on top of tasting delicious, they pack anti-inflammatory properties and can boost your gut health.

But not knowing how to clean and store mushrooms can make or break your experience in the kitchen: If you do it wrong, you'll end up with dirty or slimy shrooms that definitely don't taste good. Here's how to make sure you're cleaning and storing your mushrooms correctly, starting with how to select them at the store.

How to Choose Mushrooms

When shopping at your local farmers market or grocery store, make sure the mushrooms you choose look plump and are free of any dark spots. They should feel mostly dry to the touch and free of any slimy coating—that's a clear sign the mushrooms have gone bad.

But don't bother looking for the "cleanest" whole mushrooms at the store. More dirt in one carton of mushrooms compared to another doesn't mean there's anything wrong with them. "Mushrooms retain water, which can compromise their texture, so growers do not wash them prior to sending them to the store shelves," explains World Mushroom Society founder Jason Vergara.

How to Clean Them

You should only rinse mushrooms immediately before you're ready to prepare them, not when you first bring them home, like you might with other fresh produce. If you do, they will deteriorate more

Brush away any visible dirt with a paper towel or pastry brush.

Extra moisture prevents proper browning, so if mushrooms aren't dried well, they can develop a rubbery texture.

quickly. During storage, any trapped moisture may cause the mushrooms to become moldy, slimy and discolored, and they will lose texture and taste.

"If your mushrooms are particularly dirty, or you really feel the need to rinse them, that's an option," says Adam McCrae, founder of Mushroom Marauder. "But make sure to let them sit out on a kitchen towel for 15 to 20 minutes after rinsing so that they're nice and dry for the cooking process." You can also pat them dry or drop them in a salad spinner and take them for a ride. The important thing is to ensure that they're dry before you use them. Preventing the mushrooms from soaking up any excess moisture will help preserve their texture, and it's especially helpful for mushrooms to be dry when you're trying to get a nice brown sear on them. You could also use a damp cloth or paper towel rather than rinsing under running water or submerging the mushrooms in water. Or use a veggie brush to remove the dirt.

Consuming a bit of dirt won't hurt you, and it's nearly inevitable, since mushrooms are foraged from the ground. Still, you should do your due diligence when cleaning your mushrooms. "Some dirt can contain pesticides and insecticides [if the mushrooms aren't organically grown]," says Vergara. "So be sure to give them a thorough brushing, wipedown or rinse before eating."

Delicate and Sliced Mushrooms

If you're experimenting with cooking with mushroom varieties beyond your typical button mushrooms, you should be a bit more careful during your cleaning process.

Mild in flavor with a nice crunch, enoki mushrooms are connected by a dirt mycelium base. Vergara suggests making a clean cut at the base and separating the enokis from one another to make sure you rid them of all dirt and debris.

Despite their name, oyster mushrooms are nothing like seafood (though you can make vegan "scallops" with them), but these shrooms require a delicate touch. Use a damp towel to gently remove any dirt. This way you'll avoid tearing the flesh or breaking the gills.

Honeycomb morel mushrooms contain crevices and grooves, and they're one mushroom that you should soak well before cooking. "We suggest rinsing [morel mushrooms] under cold water and then a short soak of 10 minutes to get all the excess dirt, and potentially insects and bugs, from the cavities," says Vergara. "After the soak, you can dry the mushrooms with a colander and paper towels." You could also pop them in a salad spinner to get rid of the excess water.

Though it may seem more convenient to purchase presliced button, cremini or other mushrooms, their shelf life is not typically as long as that of whole mushrooms. Even when stored correctly, sliced mushrooms usually last only five to seven days, compared with whole mushrooms, which will last closer to 10 days.

"Even with the extra surface area exposed, they're not going to become immediately waterlogged if you give them a quick rinse," explains McCrae. "The trick here is to cook [sliced mushrooms] for a bit longer, making sure to let that extra water evaporate before adding oil or butter and getting a nice sear."

How to Store Them

The way your mushrooms were packaged at the grocery store isn't the best way to keep them at home.

"Generally speaking, most mushrooms should be stored loosely in a paper bag, or in a box or bowl with a towel over the top," says McCrae. "Allow for airflow without drying them out, and never store them in plastic, which speeds up the decay process [because it creates a humid environment]."

A paper towel in the paper bag or on top of the box or bowl will absorb any excess moisture from the mushrooms, keeping them dry and preventing slime from developing. Keep them in the crisper drawer of your refrigerator until you're ready to use them. Don't think you can use them up before they go bad? Try freezing your mushrooms instead.

Remember the critical rule: When it comes to cleaning and storing mushrooms, water is not your friend. Use a vegetable brush, another gentle brush, or a dry cloth or paper towel to remove dirt before cooking. Alternatively, if you need to introduce a little water to clean your mushrooms, use a damp cloth or paper towel. If you rinse your mushrooms, make sure to dry them thoroughly. And remember, not all mushrooms are created equal. Some will require a little more attention to clean, like enokis, oysters and morels. ●

How to Tell If Mushrooms Are Fresh

Learn what makes a fresh mushroom and when it's too funky to eat.

BY JACQUELINE WEISS

The ideal mushroom will feel dry and firm and have a smooth outer appearance. Next, check for dark spots. If each of the whole mushrooms in a package looks dark or there are dark spots popping up, it's likely that the batch is past its prime.

How to Tell If Mushrooms Have Gone Bad

Thankfully, it usually won't take a taste test! One of the obvious giveaways that mushrooms have gone bad is when their texture has changed from firm and plump to sticky and slimy. Similarly, if they are dried out or downright shriveled, it's time to toss them.

If the color of your mushrooms has noticeably changed, or if they have begun growing dark spots or fuzzy mold, they should be headed for the compost heap. Most mushrooms have barely a scent—if any—so a foul odor can be another telltale sign that your mushrooms are no longer edible.

"Some of the more delicate varieties of mushrooms, like enoki, may spoil more quickly," says Ashley Petrie, RDN, at Everyday Nutrition and Wellness. "It's always best to have a meal planned for any mushrooms you purchase."

Because there are so many mushroom varieties available, all with a different flavors and textures, they will go bad on different schedules as well. So you'll want to use your shrooms as quickly as possible, and if you're storing them because you're not cooking with them immediately, keep a close eye on them.

General mushroom rule of thumb: Fresh fungi are dry, firm and smooth and have a pleasant, earthy smell. Bad ones are softer (possibly mushy), sticky, slimy or shriveled; may be moldy and discolored; and may smell unpleasant.

How Long Should Mushrooms Last?

If they're properly stored, mushrooms can last longer than you might think. "Raw mushrooms can last up to 10 days in the fridge. However, they are best within the first week," explains Brian Jupiter, a *Chopped* champion and the executive chef at Frontier Chicago and Ina Mae Tavern. "After that, their quality decreases. Mushrooms left out of the refrigerator will last up to a day, depending on the temperature."

However, the 10-day rule does not apply to all kinds of mushrooms. If you purchase sliced mushrooms, for example, their shelf life may be only five to seven days when stored well. Some delicate varieties, such as maitake or oyster, may last just a few days before you start to see signs of spoilage.

Mushrooms will last longer if they're stored whole instead of sliced.

DRIED TO LAST

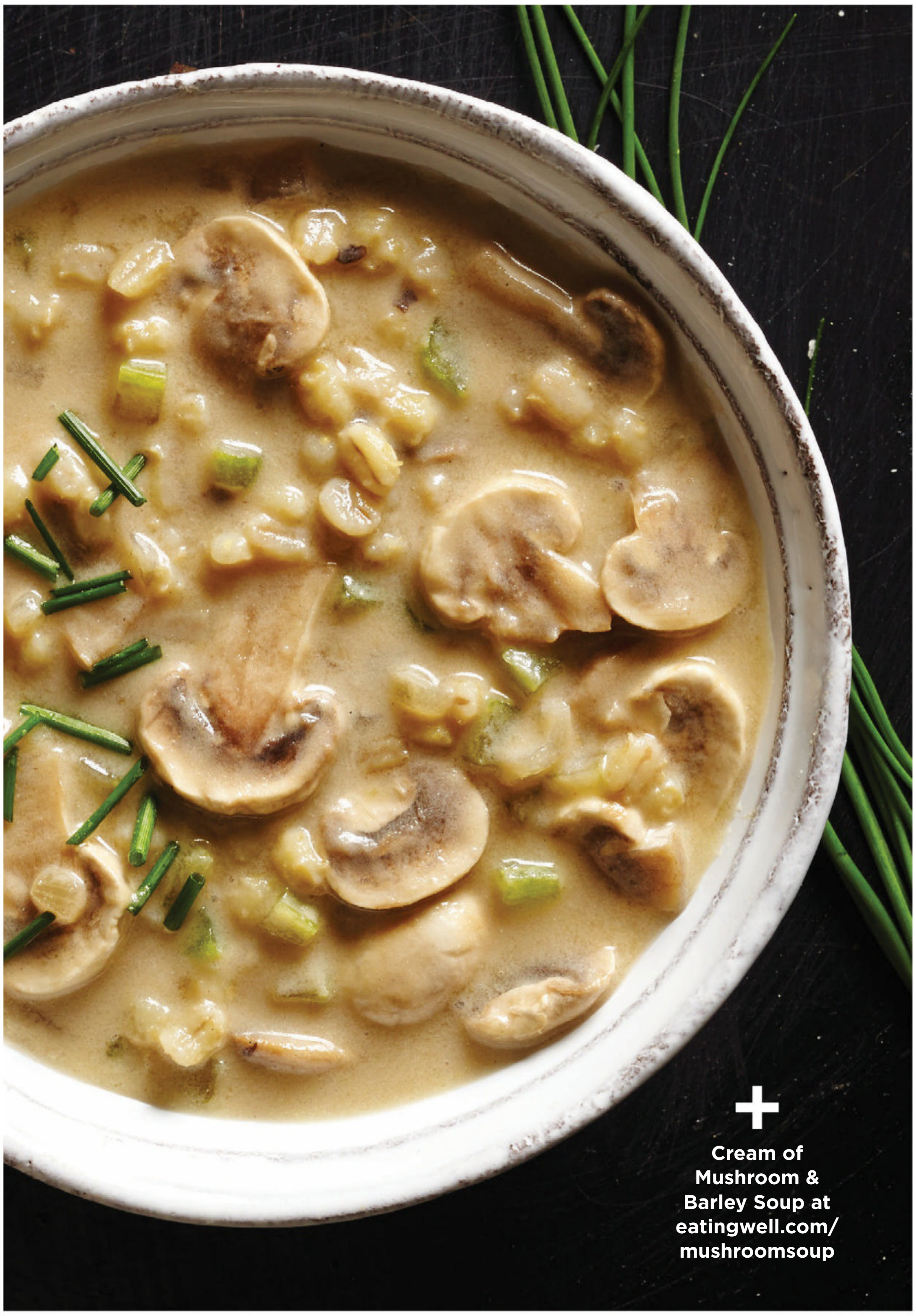
Properly drying any type of mushroom in the oven will lengthen its shelf life. Some can last for months instead of days.

BY ALEX LOH AND JOHN SOMERALL

Mushrooms are a delicious addition to any recipe. Aside from providing some great health benefits, which include boosting gut health and supplying lots of potassium, mushrooms can be enjoyed both raw and cooked. One way that we love to cook with mushrooms is by drying them. Dried mushrooms provide a concentrated punch of umami flavor—plus, they can last a long time.

How to Dry Mushrooms

When you make dried mushrooms, you're removing the moisture from the vegetable, so it turns into a dry, shriveled version. The following instructions explain how to dry mushrooms in the oven, but you could also use a food dehydrator if you don't want to tie up your oven for hours. Food dehydrators come in a number of sizes and models, and many include accessories that will help you make the most of your machine.



Cream of Mushroom & Barley Soup at eatingwell.com/mushroomsoup

Directions

Preheat oven to 170°F. Line a rimmed baking sheet with parchment paper. Arrange mushrooms, cut side down (if using sliced mushrooms), in a single layer on the prepared baking sheet. Bake until completely dry, flipping once halfway through and blotting with paper towels to remove excess moisture, about 3 to 4 hours for sliced mushrooms or 6 to 10 hours for whole mushrooms. Remove from the oven and let cool completely on the baking sheet, about 20 minutes. Store.

Whether you're drying whole or sliced mushrooms, consistency is key. Make sure they are roughly the same size to allow for a more efficient drying time. In addition, if you increase the amount of mushrooms you dry compared to the quantities listed in the chart, the bake times will remain the same. You may need multiple baking sheets to ensure you can spread the mushrooms in a single layer.

How Long Do Dried Mushrooms Last?

If they're stored at room temperature, dried mushrooms can last up to three months. However, if you're looking for a longer shelf life, dried mushrooms that are stored in the freezer will last twice as long.

How to Store Dried Mushrooms

Dried mushrooms should be stored in an airtight container or bag, and you can store them at room temperature in a cool, dry place, such as the pantry or in a cabinet. We recommend storing the mushrooms with a silica gel packet in the container, which helps prevent moisture absorption. Alternatively, dried mushrooms can be frozen in an airtight, freezer-safe container (if you're freezing them, you don't need to include a silica gel packet).

How to Use Dried Mushrooms

When you're ready to cook, the possibilities of dried mushrooms are endless. You can use them as an ingredient in homemade broth to add a deep, earthy umami flavor. Similarly, you can use dried mushrooms in a savory soup with barley and fresh herbs, or they can be ground into a powder and mixed into a seasoning blend. Add the seasoning blend to vegetarian chili for a meaty oomph. Or use the blend to flavor ground beef for hamburgers. However you choose to cook with dried mushrooms, there are plenty of delicious options. ●

How to Dry Each Type

The best ways to dehydrate different mushroom varieties, whole or sliced.

MUSHROOM	QUANTITY	PREP	TIME	YIELD
Brown Beech	1 (3.5-oz.) pkg.	Whole (stems trimmed)	3 to 4 hours	About ½ cup
Cremini	1 (8-oz.) pkg.	Whole (stems trimmed)	6 to 8 hours	About 1½ cups
Cremini	1 (8-oz.) pkg.	Stems trimmed and sliced into ¼- to ⅜-inch slices	3 to 4 hours	About 1 cup
King Trumpet	1 (9.5-oz.) pkg.	Whole (stems trimmed)	8 to 10 hours	About 2½ cups
King Trumpet	1 (9-oz) pkg.	Stems trimmed and sliced into ¼- to ⅜-inch slices	3 to 4 hours	About 1½ cups
Oyster	8 oz.	Whole (stems trimmed)	6 to 8 hours	About 2 cups
Oyster	8 oz.	Stems trimmed and sliced into ¼- to ⅜-inch slices	3 to 4 hours	About 1½ cups
Portobello	1 (6-oz.) pkg.	Whole (stems trimmed)	8 to 10 hours	2 to 3 pieces (depending on size)
Portobello	1 (6-oz.) pkg.	Stems trimmed and sliced into ¼- to ⅜-inch slice	3 to 4 hours	About 1½ cups
Shiitake	8 oz.	Whole (stems trimmed)	6 to 8 hours	About 2 cups
Shiitake	8 oz.	Stems trimmed and sliced into ¼- to ⅜-inch slice	3 to 4 hours	About ½ cup
White Beech	1 (3.5-oz.) pkg.	Whole (stems trimmed)	3 to 4 hours	About ½ cup
White Button	1 (8-oz.) pkg.	Whole (stems trimmed)	6 to 8 hours	About 1½ cups
White Button	1 (8-oz.) pkg.	Stems trimmed and sliced into ¼- to ⅜-inch slice	3 to 4 hours	About 1 cup

Freezer-Friendly Fungi

Here are three easy methods for freezing mushrooms, plus ideas for making the most of your bounty.

BY LAUREN SALKELD

Fresh mushrooms keep for up to a week in the refrigerator, but we all know how disappointing it is to discover your shrooms have turned soft and smelly. Before that happens, do yourself a favor and freeze them. Mushrooms can be frozen for nine to 12 months and used in a variety of cooked dishes. Read on for three ways to freeze mushrooms, plus how to thaw them and the best recipes for making the most of your mushroom stash.

HOW TO FREEZE RAW MUSHROOMS

Freezing raw mushrooms is super easy, but because they will retain so much water, they can turn quite mushy, which means they'll be best used in dishes that are more about flavor than texture, such as soups, stews and casseroles. Start by chopping cleaned mushrooms into slices or chunks that are ½ inch or smaller, and then spread them in a single layer on a baking sheet and freeze for a few hours, or until solid. Transfer the mushrooms to an airtight freezer bag. Label it with the date, and freeze for 9 to 12 months. Taking the time to flash-freeze mushrooms lets you pull out the amount you need for a given recipe rather than defrosting a whole bag.

HOW TO FREEZE STEAMED MUSHROOMS

To preserve some of mushrooms' signature firmness, it helps to steam them before you freeze them, though it's a bit of a fussy process.

First, sort the mushrooms by size, or cut them to a similar size—½ inch or smaller is best—and then give them a quick five-minute soak in acidulated water (1 teaspoon fresh lemon juice per 2 cups water) to prevent browning.

Using a steamer basket set over boiling water, steam the mushrooms for 3 to 5 minutes, depending on their size. To cool them, plunge them into ice water, and then spread them in an even layer on a baking sheet and let them dry. Next, transfer the mushrooms to airtight freezer bags, leaving some room for expansion, and be sure to date and label the bags.

You can portion the mushrooms based on how you're likely to use them, or press them into a thin layer so they lay flat in the freezer. That way, you can easily break off as much or as little as you need.

Mushrooms frozen in this way can be used in a wide range of favorite dishes, including pasta, pizza, stir-fries and quiche.

Make sure to date freezer bags so you know by when to use the frozen mushrooms.

HOW TO FREEZE SAUTÉED MUSHROOMS

Mushrooms can also be sautéed before freezing, which helps keep them firm and is a quicker, easier process. Cut or slice the mushrooms into pieces ½ inch or smaller, then sauté them in a small amount of butter or oil, seasoning as desired, until evenly browned. Spread the mushrooms in a single layer on a baking sheet and let them cool to room temperature. Then transfer them to airtight freezer bags, leaving room for expansion and being sure to label and date them. As with steamed mushrooms, it's best to portion mushrooms based on how you'll use them or to press them into a thin layer so you can break off exactly what you need. Sautéed mushrooms can be frozen for 9 to 12 months and used similarly to steamed mushrooms, but because sautéing concentrates the flavor, they're ideal for more mushroom-focused dishes, such as mushroom pasta sauce or mushroom risotto. You can also sauté any other seasonings, such as garlic, onion and fresh herbs, along with the mushrooms to maximize the flavor before freezing (which saves time later).

HOW TO THAW AND USE FROZEN MUSHROOMS

If you're using frozen mushrooms in a dish that will cook for a while, such as a soup, stew or casserole, you can toss them in as is, without any defrosting. For dishes that don't simmer or bake for that long, such as pizza, pasta or quiche, it's better to thaw mushrooms in the refrigerator first—they'll quickly be ready to use.

You can add frozen mushrooms directly to a stir-fry, but it's best to toss them in gradually (or thaw and drain them first) so they don't lower the temperature of the dish too much. Plus, excess moisture from frozen mushrooms could sizzle dangerously in the pan and inhibit browning, which builds flavor.

GROWING YOUR OWN

Fresh mushrooms add tons of flavor to pizza, pasta and more. Plus, they're easy to grow indoors.

BY ANDREA BECK

There's no need to be in the dark about growing mushrooms. These tasty chameleons of the food world are filled with vitamins, antioxidants and other nutrients. They're even packed with compounds that help support brain health. The main keys to growing mushrooms at home are establishing the right growing conditions and acquiring mushroom spawn, the material used to propagate mushrooms. Use these step-by-step instructions to grow oyster mushrooms, portobellos, shiitakes and more.

How Do Mushrooms Grow?

Mushrooms grow from spores (not seeds). Individual spores are so tiny that you can't see them with the naked eye. Spores rely on substances like sawdust, grain, straw or wood chips rather than soil for nourishment. The blend of the spores and these sources of nutrients is called the spawn. Mushroom spawn acts a bit like the starter you need to make sourdough bread.

The spawn supports the growth of mushrooms' tiny, white,

Only source mushroom spawn from a reputable seller. Some can be deadly, so *never* collect spores from unknown sources.

threadlike bodies, called mycelium. The mycelium grows first, before anything that resembles a mushroom pushes through the soil.

The spawn itself could grow mushrooms, but you'll get a lot better harvest when the spawn is applied to a growing medium. Depending on the mushroom type, this might be straw, cardboard, logs, wood chips or compost with a blend of materials like straw, corncobs and cocoa seed hulls.

Where to Grow Mushrooms

Mushrooms like dark, cool, humid environments. When you're growing mushrooms at home, a place like your basement is ideal, but a spot under the sink could also work.

Before you start growing, test out your spot by checking the temperature. Most mushrooms grow best in temperatures between 55°F and 60°F, away from direct heat and drafts. Enoki mushrooms grow better in cooler temperatures, about 45°F. Growing mushrooms is a good project for the winter, because many basements will get too warm in the summer to provide ideal conditions.

Mushrooms can tolerate some light, but the spot you choose should stay mostly dark or in low light. If you choose to grow mushrooms in your basement, it might be best to put them in a closet where they won't be disturbed. Some mushroom types still grow best outdoors in prepared ground or logs, which is a much longer process (six months to three years) than in controlled environments inside.

Types of Mushrooms to Grow

All kinds of mushrooms grow in the wild, and you can grow most of them at home (morel lovers, sorry—they only pop up in nature). One of the important benefits of growing your own mushroom varieties instead of wild-harvesting them is that you can be sure you're not picking poisonous mushrooms. Cremini, enoki, maitake, portobello, oyster, shiitake, and white button mushrooms can all be grown indoors, but each type has specific growing needs. For example, white button mushrooms need to be grown on composted manure, shiitakes on wood or hardwood sawdust, and oyster mushrooms on straw.

The Growing Process

If you're growing mushrooms indoors, there are a couple of options for materials you can use for planting. You can buy a mushroom grow kit already packed with a growing medium that's inoculated with mushroom spawn. These kits are a good place to start if you're new to the process, because they provide everything you need. If you choose to start without a kit, the type of mushroom you decide to grow will determine the substrate you grow the mushrooms on, so it's important to research each mushroom's needs. If you need a starting point, try button mushrooms—they're one of the easiest types of mushrooms to grow.

Step 1: Fill trays with compost. Use 14-by-16-inch trays about six inches deep that resemble seed flats. Fill the trays with the mushroom compost material and sprinkle spawn on top.

Step 2: Use a heating pad. Use a heating pad to raise the soil temperature to around 70°F for about three weeks, or until you see the mycelium (white, threadlike growths). At this point, you'll lower the temperature to 55°F to 60°F and cover the spawn with an inch or so of potting soil.

Step 3: Keep the soil moist. Keep the soil wet by spritzing it with water and covering it with a damp cloth, making sure that you keep spritzing the cloth as it dries.

Step 4: Harvest your mushrooms. Button mushrooms should appear within three to four weeks. Harvest them when the caps open; the stalk can be cut with a sharp knife from the stem. Avoid pulling up the mushrooms, or you risk damaging the surrounding fungi that are still developing. Harvesting every day should result in a continuous crop for about six months.

Once you set up a mushroom growing station in your home, it's easy to keep them growing. Eventually, you might need to add fresh spawn to grow more mushrooms, but as long as you keep the cloth damp and harvest the mushrooms as they appear, you should have a steady supply. Once you've got plenty, make sure to use them up in your favorite mushroom recipes within a few days of harvesting, as most types will keep for only a few days in the fridge. ●

UMAMI: MUSHROOMS' SAVORY FLAVOR

The fifth taste isn't so hard to pin down if you know what you're looking for.

BY RACHEL ROSZMANN

Just like there are prime numbers and primary colors, there are also primary tastes. Many of us were taught four basic tastes when we were young, but there are actually five: salt, sweet, sour, bitter—and umami.

The word *umami* is Japanese, and it roughly translates as "good flavor." It's the taste present in food that is sometimes described as "earthy" or "meaty" but isn't salty, sweet, bitter or sour. It's also sometimes simply characterized as a pleasant savory taste.

This taste comes from glutamic acid, an amino acid that occurs naturally in some foods, including mushrooms. It's also present in monosodium glutamate (MSG). Some say MSG is umami in its purest form. (Though some people think MSG is bad for you, there is not a lot of science to back this up, and MSG is generally recognized as safe by the Food and Drug Administration.)

A Japanese chemist named Kikunae Ikeda put a name to this mysterious taste experience in 1908. He used kombu seaweed broth to pin down what it is that gives food "body" and enhances flavors. What he found were amino acids that he attributed to the meaty, heavy taste that improves the way food tastes. You can get this flavor experience in foods such as aged cheese (Parmesan, in particular), tomatoes and meat without adding salty, sweet, bitter or sour elements.

Soy sauce is rich in glutamates, the flavor enhancer that's behind that umami taste.

Umami is delicious as a standalone taste and adds complexity when paired with other flavors.

What Exactly Does Umami Taste Like?

The way umami tastes is notoriously hard to describe. Some people say that glutamates are responsible for "mouthfeel" and "body" in food without adding bitterness, sweetness, sourness or saltiness. Mushrooms—portobello and shiitake mushrooms in particular—are a good example of an umami-rich food. They're earthy and meaty on their own, without any flavoring added.

Using ingredients rich in umami can enhance the flavor of foods without adding other seasonings. Researchers at the University of California, Davis, and the Culinary Institute of America did a study on the effects of mushrooms' umami flavor on beef. They blended them into meat for tacos and found that the addition of the mushrooms improved the flavor of the meat.

Using Umami at Home

Want to experience the umami flavor for yourself? While umami is often associated with beef, vegetarian dishes can offer plenty of umami flavor—and not just ones with mushrooms. Eggplant Parmesan relies on cooked tomatoes and Parmesan cheese, two umami-rich ingredients. For meat eaters, mushrooms and beef are a classic combo, playing off each other for that rich depth of flavor.

If you're looking for something simple, mixing mushrooms with ground beef to make pasta sauce is a good place to start. It combines two umami ingredients to give you a sense of the fifth taste in every bite. Or make a batch of Umami Bomb Paste, which can add savory flavor to all sorts of dishes, including tasty Umami Veggie Burgers (both recipes are on the opposite page). ●

Umami Veggie Burgers

These hearty burgers contain grated red beet as a nod to beef.

BY ANDREA NGUYEN

Umami Veggie Burgers

ACTIVE: 40 MIN **TOTAL:** 40 MIN

This burger is perfect for customizing! Pile on your favorite toppings, or skip the bun and serve with a big salad for extra servings of veggies.

- **⅔ cup walnuts**
- **1 (15-ounce) can no-salt-added chickpeas**
- **1½ cups cooked quinoa**
- **3 tablespoons Umami Bomb Paste (below right)**
- **3 tablespoons potato starch**
- **2 tablespoons finely grated red beet**
- **¾ teaspoon kosher salt**
- **¼ teaspoon ground pepper**
- **2 tablespoons canola oil**
- **4 soft whole-wheat hamburger buns, toasted**

1. Pulse walnuts in a food processor until coarsely ground. Transfer to a bowl. Add 1½ teaspoons chickpea liquid from the can to a food processor. Rinse the chickpeas and add 1 cup to the food processor. (Reserve the rest for another use.) Pulse to a coarse mashed texture. Scrape into the bowl with the nuts and add quinoa, umami paste, potato starch, beet, salt and pepper. Stir to combine well.
2. Shape the mixture into 4 patties, using about ¾ cup for each. Heat a large cast-iron or nonstick skillet over medium-high heat. Add oil; when it is shimmering, add the patties. Cook, flipping once or twice, until very browned and crisp, 5 to 8 minutes total. Transfer to a rack and let cool for 5 to 10 minutes. Serve the burgers on buns.

SERVES 4: 1 BURGER EACH
CAL 498 **FAT** 23G (SAT 2G) **CHOL** 0MG
CARBS 61G **TOTAL SUGARS** 6G
PROTEIN 14G **FIBER** 10G **SODIUM** 787MG
POTASSIUM 523MG

Umami Bomb Paste

ACTIVE: 50 MIN **TOTAL:** 1 HR

Heat 2 tablespoons **canola oil** in a medium saucepan over medium-high heat. Add 2 cups chopped **yellow onion** and ½ teaspoon **kosher salt**. Cook, stirring frequently and reducing heat as necessary, until very dark golden brown, 15 to 20 minutes. Reduce heat to medium, add 1 large chopped **garlic clove** and cook until fragrant, 15 to 30 seconds. Stir in 1 cup water, ¼ cup **tomato paste**, 1½ tablespoons **liquid aminos**, ¼ oz. finely ground **dried mushrooms** and ¼ teaspoon **ground pepper**. Adjust heat to maintain a simmer. Cook, stirring occasionally, until thick and pasty, 15 to 18 minutes. Remove from heat and stir in ¼ cup **nutritional yeast**. Let stand for 10 minutes. Transfer to a mini food processor and process until smooth.

Soft Scrambled Eggs with Truffle Butter at eatingwell.com/truffleeggs

OREGON'S HIDDEN BOUNTY

The unique black and white truffles found in the Willamette Valley are finally having their day, thanks to a quirky turn of events.

BY ROWAN JACOBSEN

I am scrambling through a patch of Douglas fir on a misty January morning in Oregon's Willamette Valley, and I'm holding a small miracle in my hand. It's knobby and muddy and certainly doesn't look like a miracle, but when I hold it to my nose, extraordinary scents fill my head, and little Pop Rocks of pleasure burst in my brain. It's a white Oregon truffle, and it has never had a good reputation.

But this little nugget is as aromatic as anything I've ever sniffed in Europe. So I ask Charles Lefevre, the gray-goateed mycologist scampering beside me—who has devoted the past 15 years of his life to promoting Oregon truffles—why they've long been snubbed by connoisseurs. He points to his two four-legged friends hoovering back and forth across the forest floor like furry Roombas. "Because no one had dogs," he tells me. "Truffle dogs were the key."

Dante and Mocha, Lefevre's dogs, are Lagotto Romagnolos, an Italian breed famed for its truffling prowess. Curly

Scallop Crudo with Truffle Vinaigrette at eatingwell.com/scallopcrudo mops with bright eyes, they are bounding from tree to tree unearthing truffles as if they'd studied a treasure map in advance. Unlike many truffle dogs that are better trained to leave the treasure alone, Dante and Mocha have no qualms about trying to eat the ones they find. The only way to prevent this is to race behind them and snatch away the goods—which is what Lefevre and I do for the next three hours, while he tries to explain to me how one of America's most amazing wild foods could have been so completely overlooked, and how truffles just might be a godsend to the local Oregon ecology and economy.

A type of mushroom, truffles are the spore-filled fruiting bodies of fungi that live symbiotically on tree roots. The fungi gather water and minerals from the soil and feed it to the trees in exchange for sugars the trees make through photosynthesis. Most truffle species grow on just a handful of tree species. In Oregon, they're almost always found beneath a Douglas fir, the dominant tree of the Pacific Northwest.

But while most mushrooms push above the surface and open like parasols, letting wind and water disperse their spores, truffles stay underground. Down there, there are no elements to help scatter their spores, so truffles use a wildly creative plan B: a cocktail of aromas—a heady mix of pheromones and volatile compounds—so arresting that passing animals will go out of their way to dig them up, eat them and spread their spores through the forest when nature calls.

And they do. Squirrels, mice, foxes, pigs and bears all go crazy for the things. Humans find them irresistible too. I adore both the luxurious depth of France's black truffles and the garlicky punch of Italy's white ones, the two species celebrated for their ability to etch a taste memory into your brain for life. I'd heard years ago that the Pacific Northwest had its own varieties of truffles, both black and white, but everyone from professional food writers to Michelin-starred chefs had wrinkled their noses when I brought them up. Some said they had no smell. Others said they were gross. All agreed that they just didn't have the same magic. They were the cubic zirconia to the European diamonds.

But then I heard about the Oregon Truffle Festival, which Lefevre started with his wife in 2006, and my curiosity got the best of me. Could a festival really survive for 14 years if its main ingredient sucked?

And so I've come for three days of truffle hunting, learning and eating where Lefevre and some of the Northwest's best chefs will try to convince me and a thousand other curious souls that America's native truffles can run with the big dogs.

Speaking of, I have just thrown myself into the dirt to snag a truffle from Mocha's maw, and as I lie there in the fog, a fine mist dripping off the firs, I can't help but take another sniff. I'm already starting to believe, because this little nugget is as aromatic as anything I've experienced in Italy. And so I ask Lefevre again how these truffles could have developed such a bad reputation.

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"The thing you have to understand..." he begins, then shouts, "Wait, Dante, no!" and tears off after his pooch, who has hit a mother lode and is gobbling down the world's most expensive dog treats. It's all I can do to keep up, and the secrets of the Oregon truffle will have to wait a bit longer.

As a highly coveted food that grows in tiny quantities, truffles have always commanded daunting prices. Black truffles from Europe are widely propagated and go for $800 a pound. White truffles, which have much more intense aromas and have resisted many efforts to be cultivated, tip the scales at $3,000 a pound. Until recently, however, Oregon truffles fetched only $25 a pound.

It's all about the harvesting, Lefevre explains as we chase Dante and Mocha through the woods, filling our pockets with rescued treasure. Pigs were humanity's original truffling partners. Natural enthusiasts, they probably trained Europeans to hunt truffles as much as the Europeans trained them. But pigs love truffles too much, and too powerfully. It's difficult to stop a 400-pound porker from eating what it finds. Besides, truffle hunters like to keep their best spots secret—and if you've got a pig in your Fiat, everyone knows exactly what you're doing.

Unlike other wild edibles, truffles grow like fruit, so picking them doesn't harm the parent fungus, which will continue to make more truffles.

In the Pacific Northwest, however, there was no truffle-dog culture. When hunters first began harvesting truffles a few decades ago, they used rakes. The truffles grow beneath Douglas firs in loose soil near the surface, easy pickings for a determined raker. But while dogs detect only ripe truffles, raking is indiscriminate and can pull up a year's worth of immature truffles along with a few good ones. And an unripe truffle has all the appeal of a raw potato.

Oregon truffles also have a shorter shelf life than their European counterparts—10 days max. And they need to be cleaned and refrigerated immediately or they go bad even faster. At $25 a pound, few rakers bothered to give them the extra love they needed. And let me just say that a rotten truffle is foulness incarnate.

Back in the early 2000s, Lefevre was studying mycology at Oregon State University and foraging for truffles as a hobby. He knew ripe ones smelled and tasted amazing but that few people had ever experienced them in their prime. "It seemed like there was an opportunity to redeem these species," he tells me as we head back to his car, clothes covered in dirt, pockets bulging.

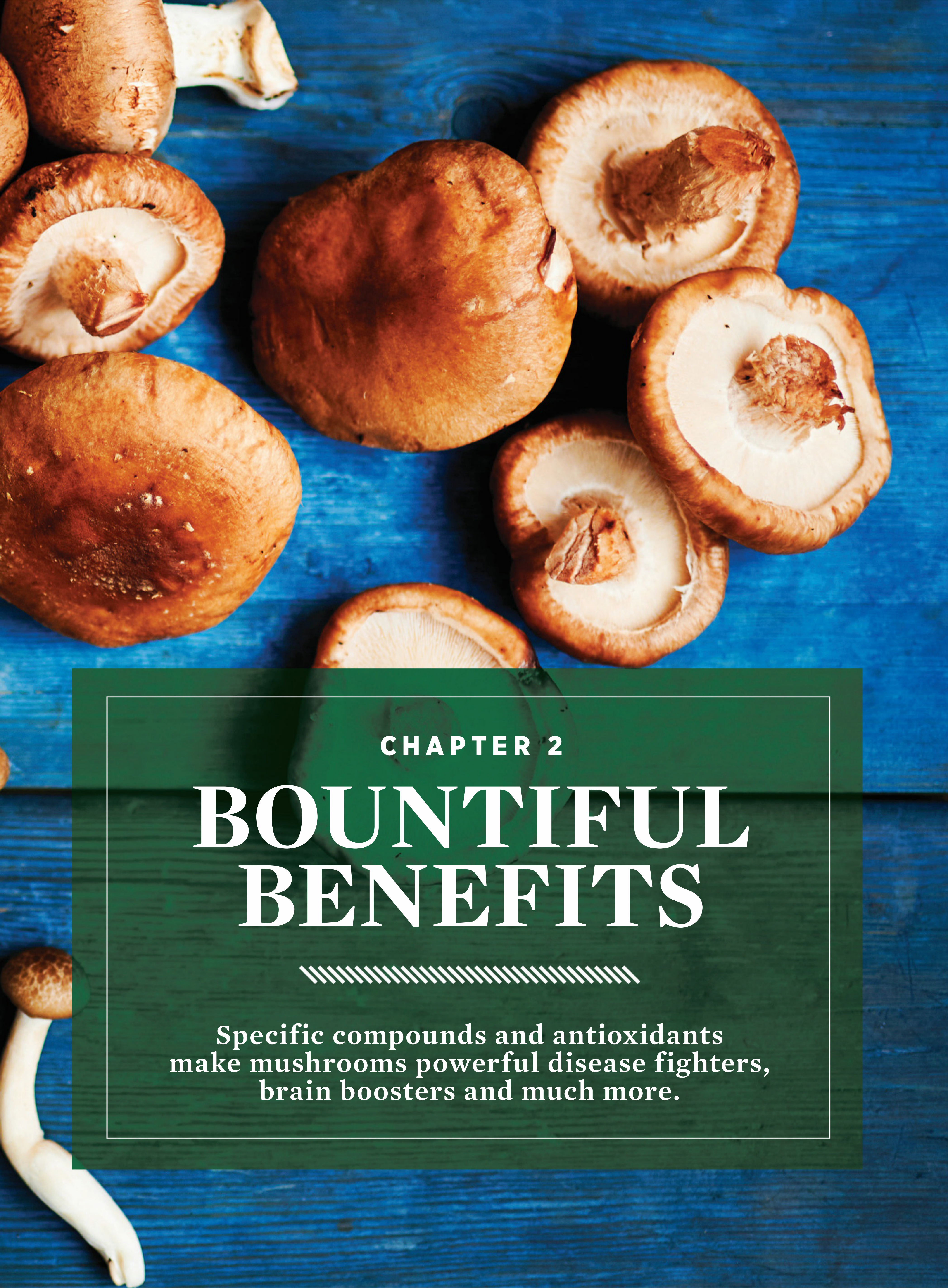
"When you use a dog, you get better truffles," Lefevre says. "The aesthetics are better, the prices are better and it's less work. Besides, working with a dog in the forest is part of the mystique. There's just no reason not to use a dog."

Today, Oregon is crawling with truffle dogs, a canine corps that is transforming the reputation of Northwest truffles. Chefs have noticed, and prices for dog-harvested truffles have risen to several hundred dollars per pound. Not only is that a win for local gastronomy, Lefevre says, it's also a game-changer for the forests. An acre of Douglas fir can produce thousands of dollars' worth of truffles every year, which means the trees are more valuable alive than cut for timber. And those living forests are hugely beneficial for wildlife and biodiversity, as well as for carbon sequestration—the trees draw greenhouse gas out of the atmosphere and store it deep underground, beneath their roots. Plus, unlike ramps and other wild edibles that can be overharvested, truffles grow like fruit, so picking them doesn't harm the parent fungus, which will continue to make more truffles. It's all part of a remarkable awakening, a new way of enjoying the woods that was hiding in plain sight.

Like their European counterparts, Oregon black truffles have the cool, comforting scents of black olives and cocoa, but they add their own unique tropical undertones of banana and pineapple, which makes them great in desserts. As they mature a little more, they develop the delightful funk of farmhouse cheese.

With their fleeting shelf life, Oregon truffles are never going to become international stars like their tougher overseas siblings. But maybe that's fine. Let it be an experience that can't be had anywhere but here. After all, how often do you get to sniff out a beautiful new cuisine? ●

Beet Carpaccio with Truffles at eatingwell.com/beetcarpaccio



CHAPTER 2

BOUNTIFUL BENEFITS

Specific compounds and antioxidants make mushrooms powerful disease fighters, brain boosters and much more.

Reishi mushrooms may benefit immune and overall health.

MUSHROOMS MAKE THE BEST MEDICINE

Fungi are among the original medicines, used over the centuries to heal and protect. And on your plate, new research has found, they live up to the hype.

BY DEANNA PAI • REVIEWED BY JESSICA BALL, M.S., RD

While fungi are often overshadowed in the realm of nutrient-dense foods—where leafy greens and vibrant fruits reign supreme—compelling research has found that their unique properties can benefit and protect your brain, heart and gut health.

If any food source has stood the test of time, it's mushrooms. The use of these unassuming fungi spans millennia, so much so that they've been found in long-preserved corpses like Ötzi the Iceman, the mummy of a man preserved in ice and discovered in pristine condition in the Ötzal Alps of Italy. Estimated to have died around 5,300 years ago, he was discovered with birch polypore—a type of medicinal mushroom—in his digestive tract.

The popularity of mushrooms for their medicinal value spread through time and cultures. While they've been a mainstay of traditional Chinese medicine for centuries, anthropologists also report that mushrooms were popular among the First Peoples of North America: Puffball mushrooms, for example, were

Vegan Pulled Mushroom BBQ Sandwiches at eatingwell.com/ mushroomsandwich

used both for food and for wound healing. (That might explain why many cultures considered them sacred.) Within the last century, fungi have led to new medications such as penicillin. And recent research published in *Nature Microbiology* shows that they may offer even more potential to become new antibiotics and pharmaceutical drugs.

Mushrooms' capacity for healing seems to work from within—that is, when they're ingested. When you include certain types in your diet, research shows, they may help protect against everything from cognitive impairment to certain types of cancer. To be fair, mushrooms have always had something of a health halo, says Robert Beelman, Ph.D., a professor of food science at Pennsylvania State University. "It used to be that we promoted them to eat because of what they didn't have in them, such as any sugar," he says. "They're low glycemic index, low in fat, low in sodium and low in calories."

One implicit advantage stems from what mushrooms are not—namely, meat. They're often enjoyed as a popular meat replacement (think portobello mushroom burgers and mushroom tacos), thanks to their rich flavor and meaty texture. And subbing in mushrooms for red meat, which is linked to a host of health concerns, can be beneficial in and of itself. "If you're eating a portobello instead of a double bacon cheeseburger, you're going to have health benefits," says Adam Freeman, M.D., a cardiologist who researches lifestyle interventions for cardiovascular diseases.

But new research shows it's as much about what they do offer as what they don't. "Because of the fiber compounds, the sulfur compounds and even some other vitamins and minerals—because of the beta-glucan and ergothioneine—mushrooms are beneficial," says Susan Percival, Ph.D., a professor of nutritional science and the chair of the of the department of food science and human nutrition at the University of Florida.

As a result, mushrooms might be beneficial for those following a more Western-style diet. "The

Western-style diet is characterized by a high intake of fat, protein and sugar but low in fiber, vitamin D and other micronutrients, which makes it a risk factor for many diseases," says Zhenhua Liu, Ph.D., a professor at the University of Massachusetts–Amherst, who recently received funding to study mushrooms' health benefits. "Mushrooms possess a unique dietary composition rich in multiple nutrients that are lacking in the Western-style diet, making them a perfect supplement to improve the quality of the diet, gut microbiome profile and inflammation."

Reducing inflammation appears to be one of the ways in which mushrooms can be especially helpful. "We already know that antioxidants and many of the compounds [in mushrooms] are anti-inflammatory," says Freeman. "And that seems to help every disease, since the root cause for virtually every disease is inflammation. If you can figure out a way to control inflammation through medications, diet, lifestyle and exercise, you can often control disease." Even more significant is that some of these compounds seem to be unique to mushrooms, giving them outsize importance when they're on the menu.

Critical Compounds

For starters: "Mushrooms [contain] precursors to vitamin D, which lots of people run low on, especially in the winter," says Freeman. Vitamin D is notoriously hard to come by, but the body can synthesize it with the help of UV radiation—in other words, sunlight. Vitamin D deficiency, Freeman notes, can be seasonal (when there's less overall sunlight) or year-round, depending on how much time you spend outdoors. And that can have big health consequences. Not only is vitamin D essential for bone health—it helps with calcium absorption and therefore bone mineral density—but it's also anti-inflammatory. There is evidence it may have a preventive effect against cardiovascular disease, some types of cancers and even neurodegenerative diseases such as dementia.

The primary issue is that there aren't many dietary sources of vitamin D, and those that do exist, such as fatty fish, eggs, and dairy, tend to be animal-based. One promising plant-based source? Mushrooms.

The process of producing vitamin D is similar in mushrooms and humans. "The way we make it, UV light strikes our skin and the cholesterol in the skin is converted to vitamin D_3," says Beelman. "But mushrooms have a different sterol in their membranes: ergosterol. And so when light strikes that ergosterol, it converts it to a very similar compound."

Then there's mushrooms' natural content of selenium, which they draw from the soil. "Mushrooms pick up selenium very readily if it's present in the substrate [soil]," Beelman says. Selenium is essential for the body; it's involved in everything from metabolism of the thyroid hormone to DNA synthesis. Most notably, though, it's involved in cardiovascular function. Being deficient in selenium can increase your risk of heart failure, coronary heart disease and other conditions, in part because this trace mineral contains antioxidant properties.

While both vitamin D and selenium offer antioxidant properties, two other potent compounds seem to be unique to mushrooms: glutathione and ergothioneine. “Both are powerful antioxidants that protect the body and brain from free-radical damage,” explains Michelle Babb, RD, a registered dietitian in Seattle and the author of *Anti-Inflammatory Eating Made Easy.* (Free radicals are unstable molecules triggered by oxidative stress; they can damage DNA and trigger inflammation throughout the body.)

Together, glutathione and ergothioneine make a powerful duo. In a 2021 study in *Advances in Nutrition,* which found an association between a high mushroom intake and lower risk of cancer (particularly breast cancer), the researchers point to both compounds—and their ability to quell oxidative stress—as the possible reason. For instance, glutathione alone can help reduce and even reverse oxidative stress, says Beelman. Glutathione is so powerful, in fact, that the researchers even found it might actually help remove certain carcinogenic compounds from the body, which may help reduce cancer risk.

Shiitake mushrooms are known for their high levels of antioxidants and may help lower cholesterol and support the immune system.

Then there’s ergothioneine, which is an amino acid. “It’s a very potent antioxidant and anti-inflammatory agent,” says Beelman. Although ergothioneine is found naturally in the human body, the levels drop over time, possibly due in part to a Western-style diet. Being deficient in ergothioneine could have consequences for your health, with research linking low levels to higher rates of cognitive impairments such as Parkinson’s disease and Alzheimer’s disease. Ultimately, “there’s more and more evidence every day that if the body does not have enough of this, it’s subject to chronic diseases,” Beelman says. In a 2020 paper in the *Journal of Nutritional Science,* he argues that ergothioneine should be considered a “longevity vitamin.”

In addition to possessing preventive properties, ergothioneine may have a reparative effect. New research has found that it may be able to blunt the severity and mortality risk of COVID-19. What might also be at play in that regard is the capacity of mushrooms to support your overall immune system, which plays a role in just about every preventable disease out there. “If you support immunity, then you’re really supporting all kinds of things—you are preventing colds, you are preventing illnesses,” says Percival, whose research found that eating shiitake mushrooms daily could enhance immunity.

She hypothesizes that this immune support is due to mushrooms’ high content of beta-glucan, a type of soluble fiber found in the cell walls of fungi. “It’s not digested and absorbed, so it travels into the large intestine, where our microbiome microbiota utilizes the beta-glucans,” she says. “The guess is that we’re impacting immunity via mechanisms related to the microbiota.” In supporting your gut health—which ample research has shown to be a key modulator of the immune system—beta-glucan may affect your overall health.

Maximizing the Benefits

Ultimately, “individual compounds that are present in mushrooms [may reduce the risk of] disease because of their antioxidants and disease-neutralization effect, if you will,” says Freeman. “There’s emerging evidence suggesting that mushrooms by themselves appear to reduce some cardiovascular risk factors. That’s a plus.” It doesn’t stop there. A landmark 2021 study published in *Nutrition Journal,* which followed more than 30,000 people between 2003 and 2014, found that frequent mushroom consumption among participants was associated with a lower risk of mortality from all causes, not just cancer and dementia.

To Freeman’s point, the evidence is still in the works, which means there are no clear guidelines for how often to eat mushrooms or how many you need to eat per meal in order to, for example, see an improvement in cholesterol, since a healthy diet includes a variety of fruits, vegetables and fungi. While in Percival’s study participants ate shiitake mushrooms daily in order to reap the immune-supporting benefits, “we don’t eat one food; we eat a bunch of different foods,” Percival says. “So incorporating mushrooms is a small added benefit to the total diet.”

Worth noting, however, is that a single serving of mushrooms per day—84 grams—is a good

Takikomi Gohan (Shiitake & Vegetable Rice) at eatingwell.com/ takikomigohan

source of ergothioneine and glutathione, not to mention a ton of other nutrients, such as fiber and potassium. If you do want to up your mushroom intake, it helps to eat a diversity of mushrooms. “Certain types of mushrooms offer more health benefits than others,” says Jennifer Maeng, RD, a registered dietitian in New York City. “For example, shiitake mushrooms are known for their high levels of antioxidants and can help to lower cholesterol and support the immune system. Oyster mushrooms are high in B vitamins and copper, while maitake mushrooms contain more beta-glucan. Reishi mushrooms are said to have immune-supporting and anti-aging properties.”

As far as certain amino acids like ergothioneine, it seems that variety also rules. In one experiment Beelman conducted, “shiitake and oyster and king oyster mushrooms had roughly the same amounts, but it was four times as much as the button mushroom,” he says. (He notes that porcini mushrooms also tend to be rich in ergothioneine.) However, white button mushrooms shouldn’t be totally off the table; in fact, those you find at the grocery store can be “good sources of selenium,” says Beelman, who adds that they can even offer the recommended dietary allowance in a single serving.

How you eat them also matters. If you’re working with whole mushrooms from the farmers market or grocery store, “it’s best to eat mushrooms cooked instead of raw, because it makes the active phytonutrients more bioavailable and breaks down any residual toxins,” Babb says.

If you don’t love the taste or texture, consider getting your mushroom fix in powder form, which may be delivered in a capsule or can be steeped in hot water. “Some preliminary studies suggest that mushroom powders, teas and supplements may have potential health benefits—for example, they may help support the immune system, fight inflammation and help protect against certain types of cancer,” says Maeng, who emphasizes that you should also talk to your doctor before taking these, as they could interact with certain medications or come with side effects. Percival recommends looking for powders made from whole mushrooms, as they’re more likely than teas and tinctures to contain the nutrients found in mushrooms.

The bottom line? The key to reaping the many disease-fighting benefits of mushrooms is “figuring out a way to add mushrooms into your diet that adds good flavor and replaces [less nutritious] foods,” says Freeman. “That’s really where the greatest gain is.” ●

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BRAIN-HEALTHY BLOOMS

Certain types of mushrooms may help stave off cognitive decline and lessen symptoms of anxiety and depression.

BY ASHLEY ABRAMSON
REVIEWED BY JESSICA BALL, M.S., RD

Cognitive decline is a natural part of aging. As you get older, your brain does too—and you may notice your mind feels foggy, it takes longer to recall words or that learning new things is more challenging. As scientists continue to study the mechanisms behind age-related changes to the brain, including how to prevent them, a growing body of research suggests nutrition in part holds the key to protecting the brain from cognitive impairment. One important component is the fruiting body of fungi: the mushroom.

Along with supporting the immune system and helping the body adapt to stress, the chemical compounds found in mushrooms could also improve brain health. Researchers consistently point to mushroom consumption as beneficial for cognitive disorders such as dementia and Alzheimer's, and it's thought that eating mushrooms regularly could reduce cognitive decline as we grow older.

Scientific data about how it all works is still emerging, but experts agree that expanding your palate to include more mushrooms could have lasting benefits. Ahead, your guide to mushrooms and the mind.

Supporting Brain Health

Technically, fungi aren't plants. But like their nutritious cousins fruits and vegetables, mushrooms contain many compounds proven to help the body and brain function optimally. A 2019 study in the *Journal of Alzheimer's Disease* found that people who ate more than two servings of mushrooms weekly had a lower chance of developing mild cognitive impairment and that the compounds found in mushrooms could delay the process of neurodegeneration by supporting nerve function.

According to Riana Giusti, an integrative nutritionist specializing in brain health at Starkel Nutrition in Seattle, mushrooms have several properties that can benefit cognitive health indirectly and directly. First, mushrooms are a low-calorie food, which can support brain health by supporting a healthy weight. Studies link obesity with premature cognitive decline, possibly as a result of inflammation in the body and brain.

Mushrooms contain vitamin B$_5$, an essential nutrient that helps create compounds that protect the brain from dementia and Alzheimer's disease.

Some mushrooms foraged from the wild contain vitamin D, which can promote nerve function and reduce inflammation. Most mushrooms you'll find at the store were grown in the dark, but some manufacturers use UV light to promote vitamin D synthesis and label their products as such. Depending on the soil they were grown in, mushrooms often contain a mineral called selenium, which has been shown to help protect against inflammation in the brain. And fungi also contain vitamin B$_5$, an essential nutrient the body uses to create and maintain compounds that can protect the brain from dementia and Alzheimer's disease.

Mushrooms also have powerful antioxidant properties that could promote brain health. A 2022 study published in the *British Journal of Nutrition* showed that mushrooms contain potent compounds known to protect the nervous system, of which the brain is the command center. Among the 2,840 participants age 60 and older, those who consumed more mushrooms performed higher on cognitive tests, which suggests that eating more mushrooms could prevent cognitive decline.

Antioxidants play several important roles in preventing aging-related disease, including dementia. Exposure to toxins in the environment (such as smoke, pollution and pesticides), along with the consumption of highly processed foods and alcohol (both of which are inflammatory), can promote oxidative stress, which is known to increase the risk of dementia because of how it affects the brain.

"Oxidative stress can impair neurotransmitter function and promote brain inflammation, which can cause brain fog, fatigue and memory loss," says Carla Kuon, M.D., an integrative physician at the University of California–San Francisco Osher Center for Integrative Health. "Antioxidant support is really important for that."

Antioxidants found in mushrooms can promote gut health and cardiovascular health, which can support brain health. (The gut contains neurotransmitters that help with brain function, while your brain needs a healthy blood supply and blood vessels to effectively use nutrients.) Some compounds in mushrooms cross the blood-brain barrier, which means they could more directly affect the brain.

Different types of mushrooms contain compounds that can impact the brain in unique ways. One well-studied antioxidant compound is an amino acid called ergothioneine, found primarily in king oyster, maitake, oyster and shiitake mushrooms. According to Barry Halliwell, a biochemistry professor at the National University of Singapore who studies mushroom compounds, the body has specific transporters for ergothioneine, which allow it to cross the blood-brain barrier. Other antioxidants, such as polyphenols and carotenoids, aren't transported as easily into the brain, which suggests that ergothioneine could be especially useful in promoting brain health.

A growing body of research confirms the importance of this amino acid. A 2019 study found that participants with cognitive impairment had low ergothioneine levels in their blood, suggesting the compound may play a role in preventing problems with cognition. A 2022 study of 470 older adults

Maitake mushrooms are rich in many of the nutrients believed to enhance brain function.

undergoing care for memory loss discovered low ergothioneine levels to be associated with poorer cognitive performance and faster cognitive decline.

Beta-glucans, a form of soluble fiber with antioxidant properties, are also found in the cell walls of many common mushrooms, such as shiitake, maitake, brown mushrooms and oyster mushrooms. The compound is known to promote healthy cholesterol levels in humans; high cholesterol is a well-established risk factor for dementia.

Animal and lab studies suggest the fiber has anti-inflammatory properties, which could support brain health by staving off oxidative stress. In animal studies, beta-glucans also helped to improve memory function by improving communication between the gut and brain (known as the gut-brain axis). According to Kuon, the compound can increase a chemical signal called BDNF (brain-derived neurotrophic factor) that allows the body to create new neural connections and generate new neurons—essential processes for healthy memory. More research is needed to determine how these compounds can impact human brain function.

Lion's mane, a white, pompom-like mushroom that grows on dead trees, contains compounds that have been shown to stimulate brain cell production. While animal models suggest lion's mane consumption may improve Alzheimer's symptoms in mice, there aren't yet trials proving the same in humans. Studies do show, however, that people who take lion's mane as a supplement experience improved cognitive functioning that goes away when they stop consuming the supplement.

Eating More Mushrooms

Though mushrooms are not technically vegetables, MyPlate, the USDA's nutrition guidelines, includes them in the vegetable food group. The guidelines encourage adults to consume anywhere from 2.5 to 4 cups of vegetables per day.

Research shows that enoki mushrooms may help regulate attention, learning and memory.

If you're looking to prevent or address cognitive decline, Giusti encourages consuming a variety of mushrooms. "Rather than always buying the ubiquitous white mushroom, opt for whatever special mushroom you can find so you can get different nutrients," she says.

It can be easy to find common varieties like button, crimini, portabella, shitake and even oyster mushrooms at your supermarket. To expand your palate to new mushrooms, check out a local farmers market—Giusti says mushrooms are seasonal in fall and spring—or a specialty grocery store. Don't forage and eat your own mushrooms unless you're experienced or with an expert. Kuon cautions that some mushrooms aren't safe to eat—certain species are even known to cause neurological damage.

A few other guidelines for food safety: While your favorite salad bar may serve white button mushrooms, Kuon says it's best to cook all raw mushrooms before eating them. "Raw mushrooms have toxins to defend themselves against predators and insects, and they're bad for the liver," she says. Luckily, these toxins are heat sensitive, meaning they disappear when you cook mushrooms. As a bonus, cooking also breaks their tough cell walls, so the nutrients are more readily available. It's good to wash organic store-bought mushrooms before cooking, but Kuon says they're typically not produced on big farms with contaminated soil. Don't soak them in water before cooking—they may get waterlogged and soggy.

As for how to eat them? It's easy to add them to a stir-fry, pasta, eggs or soup; roast them with other veggies as a side with a favorite protein; or even grill larger varieties and eat them as you would a burger. Giusti recommends chopping them finely and adding them to pasta sauce or atop an animal protein or salad. You can also use chopped mushrooms as a substitute for ground meat in many recipes, thanks to their savory, meat-like umami flavor. To get the most out of your mushrooms, Kuon recommends sautéing them in a brain-healthy oil such as clarified ghee. If you're cooking at a lower temperature, use olive or perilla oil, both of which are rich in brain-supporting omega-3 fatty acids.

If you don't like the texture of mushrooms but still want to incorporate them into your diet, Giusti says umami spice blends often include shiitakes. Try adding the powder to soup broth, seasoning food with it or using it as a dry rub on animal protein. Giusti and Kuon agree that supplements can be useful—it's easier to get a higher volume of nutrients, especially if you don't like the taste of certain mushrooms or they're not easy to find at the store. A 2019 systematic review published in *Current Developments in Nutrition* found supplements with lion's mane, reishi and cordyceps mushrooms helped participants with memory—even those with dementia and Alzheimer's symptoms.

Keep in mind that fungi are just one potentially useful component of a brain-healthy lifestyle. Anti-inflammatory diets that incorporate plenty of plants and healthy oils and limit highly processed foods, for example, have been found in studies to promote long-term brain health. It's also important to couple your nutrition strategy with physical activity and stress-reduction techniques. "Any one of these things alone won't do it," says Kuon. "But if you adopt a lot of healthy lifestyle changes, the impact on the brain is additive and beneficial." ●

Some Mushrooms Are Mind-Altering

Researchers are exploring how psilocybin could improve certain mental health conditions.

BY ASHLEY ABRAMSON • REVIEWED BY JESSICA BALL, M.S., RD

Along with helping to protect your brain from the effects of age-related memory loss, chemicals in certain mushrooms may have a powerful effect on your mood. The compound psilocybin, found in mushrooms native to Europe and the Americas, is known to cause hallucinations—seeing or hearing something that isn't there—and can sometimes create a sense of euphoria and peacefulness.

While mushrooms with psilocybin have long been used recreationally (you've probably heard the term "magic mushrooms"), ongoing research suggests the compound may have positive effects that extend past the time of use, even improving mental health.

Used medicinally for thousands of years by indigenous populations, psilocybin acts on areas of the brain that affect mood, cognition and panic response. In 2006, the Johns Hopkins Center for Psychedelic and Consciousness Research published a seminal study on the potential positive effects of psilocybin that suggested the compound can lead to a "spiritual" experience of self-discovery.

That research set the stage for scientific studies of how the compound could be used to treat mental health disorders in a therapeutic setting, in which a trained medical professional conducts psychotherapy after giving a patient a dose of psilocybin. A 2020 study found that psilocybin may increase emotional and brain plasticity, or the ability to feel and think differently.

One study found that people with treatment-resistant depression saw significant symptom improvement after undergoing psilocybin therapy. A 2018 meta-analysis concluded that the majority of participants with anxiety disorder either saw moderate improvement or experienced full recovery. Researchers also believe the therapy could improve the symptoms of post-traumatic stress disorder, though no randomized control trials have yet been conducted on humans.

Psilocybin use is currently legal in Oregon and Colorado, with legislators in other states working to legalize its use as scientific research on the compound continues. Until the therapy becomes widely available, integrative physician Carla Kuon, M.D., discourages people from using psychedelic mushrooms recreationally due to concerns about safety and effectiveness.

Experts believe the environment of psilocybin therapy, the ability to set goals and intentions, and the therapist-client relationship all play a role in improving the symptoms of mental health conditions. "I'm concerned about people trying to self-dose without supportive mechanisms in place," Kuon says. "These things are just as important."

UNDERSTANDING ADAPTOGENS

They boast immune-supporting and stress-reducing benefits, but do adaptogenic mushrooms live up to their name?

BY AKANKSHA SINGH
REVIEWED BY MARIA LAURA HADDAD-GARCIA

Adaptogens are an increasingly common part of our health and wellness vernacular, both online and offline. New and exciting to the majority of the Western world, they're mentioned as ingredients in protein powders and supplements in flashy fonts: ashwagandha, reishi mushrooms and cordyceps, to name a few. The word *adaptogen* was coined by Soviet scientist and medical doctor Nicolai V. Lazarev in the 1940s in reference to herbs and mushrooms that resisted stress. The word itself comes from the Latin *adaptare,* which means "to adapt."

Eastern medicine—notably from China and India—has been using what we call adaptogens for centuries. But what are adaptogens, exactly, and how do they impact our well-being?

Simply put, adaptogens are herbs, roots and mushrooms that help regulate our stress hormones. With the rise in stress-related diseases, adaptogens are more useful than ever before, explains Casey Kelley, M.D., a Chicago-based integrative and functional medicine doctor with a specialty in complex chronic disease.

"Adaptogens help our system adapt to changes or stressors to prevent damage from these [same] changes. Adaptogens are nontoxic at therapeutic levels, nonspecific [meaning they increase resistance to a variety of harmful factors], and normalize or balance the body.

"Adaptogens work by helping to balance our hypothalamic-pituitary-adrenal [HPA] axis," Kelley explains. The HPA axis mediates the effects of stressors by regulating the autonomic nervous system—the part of your nervous system that controls involuntary actions, such as breathing and heart rate—as well as regulating your metabolism and immune responses. "By working to keep things in balance, [adaptogens] can both help increase hormones that need to be boosted and calm down hormones that need to be reduced," Kelley says.

It's for this very reason that we see wellness influencers on social media taking ashwagandha for daily stress and to support their immunity or licorice to increase energy and regulate stress hormones such as cortisol.

A 2020 scientific review of adaptogens in traditional medicine systems (such as Chinese medicine and Ayurveda) and conventional medicine concluded that "adaptogens function like stress vaccines to activate the body's defense system and metabolic rate, reversing the negative physical effects of stress and restoring the body's balance and health." The review, published in *Medicinal Research Reviews,* also noted that "adaptogenic effects like those seen in [adaptogens such as] ginseng, rhodiola, eleutherococcus, withania and schisandra have been scientifically validated as being effective against chronic inflammation, atherosclerosis and neurodegenerative cognitive impairment."

In other words, it's possible we'll see more research on the impacts of adaptogens with regard to Alzheimer's disease, metabolic disorders, diabetes and cancer in the near future.

But Is This All Too Good to Be True?

"There is research that supports the use of adaptogens in improving mental fatigue, in cognitive functions including short-term memory improvement and concentration, and in promoting health for general well-being," says Maya Feller, RD, a Brooklyn-based dietitian and nutritionist at Maya Feller Nutrition. "They provide support for the central nervous system, the immune system and the endocrine system."

One well-known adaptogen with a fair amount of research to support its reported benefits is ashwagandha, a medicinal plant that has been used in Ayurvedic and indigenous medicine for more than 3,000 years. A 2021 scientific review of 41 studies in the *Journal of Herbal Medicine* noted that the "strongest evidence for therapeutic efficacy of ashwagandha is the alleviation of stress and anxiety symptoms."

Kelley notes that there is also some research to back up claims that the reishi mushroom "has immune modulating properties [and] has been shown to be helpful for diseases like cancer."

A 2020 study on reishi mushrooms in lung cancer patients who were undergoing chemotherapy confirmed this, to some extent. The study, published in *Integrative Cancer Therapies,* found a "promising trend" in the quality of life and emotional well-being of patients who consumed reishi mushrooms. However, with just 82 participants, the study also concluded that more human trials were needed to fully understand the benefits reishi mushrooms could offer.

Additionally, Kelley says that research around *Hericium erinaceus,* or lion's mane, another adaptogenic mushroom, "was found to help lower anxiety and depression." A 2020 review of existing studies on the mushroom concluded that it had "potential" as a "complementary and alternative medicine for the treatment of depression," again noting that "current research on antidepressant effects by *Hericium erinaceus* is relatively still at an early stage and [requires] further investigation."

Similarly, says Kelley, cordyceps seem to offer multiple benefits, including improved performance during exercise, anti-inflammatory properties and perhaps even cancer-fighting abilities. A 2021 study published in *Microorganisms* confirmed that although cordyceps do have anti-inflammatory properties, we've yet to investigate cordyceps "by contemporary scientific methods including gene sequencing, [and] pharmacological research and clinical trials." A 2020 study published in *Mycobiology* found that "cordyceps could be useful material for an adjuvant and a functional

Herbal adaptogen powders are usually ground from dried leaves or roots.

food improving exercise performance," while the most recent studies on cordyceps' cancer-fighting abilities lack clinical human evidence. A promising 2020 study published in *Carbohydrate Polymers* on cordycept's anti-cancer abilities, for instance, was carried out on colon-cancer cell lines.

None of this is to say the claims made by the smoothie shop down the street that adds Siberian ginseng—a stress-busting, adrenal-regulating adaptogen—to your blueberry smoothies aren't accurate. Rather, we're simply waiting on newer research to fully confirm that validity. After all, many of these adaptogens have been a part of traditional medicine systems for centuries.

That said, both Kelley and Feller caution against approaching adaptogens as cure-alls. "While adaptogens may help to provide some relief from symptoms, the root cause of any set of symptoms should be addressed to fully heal," Feller says.

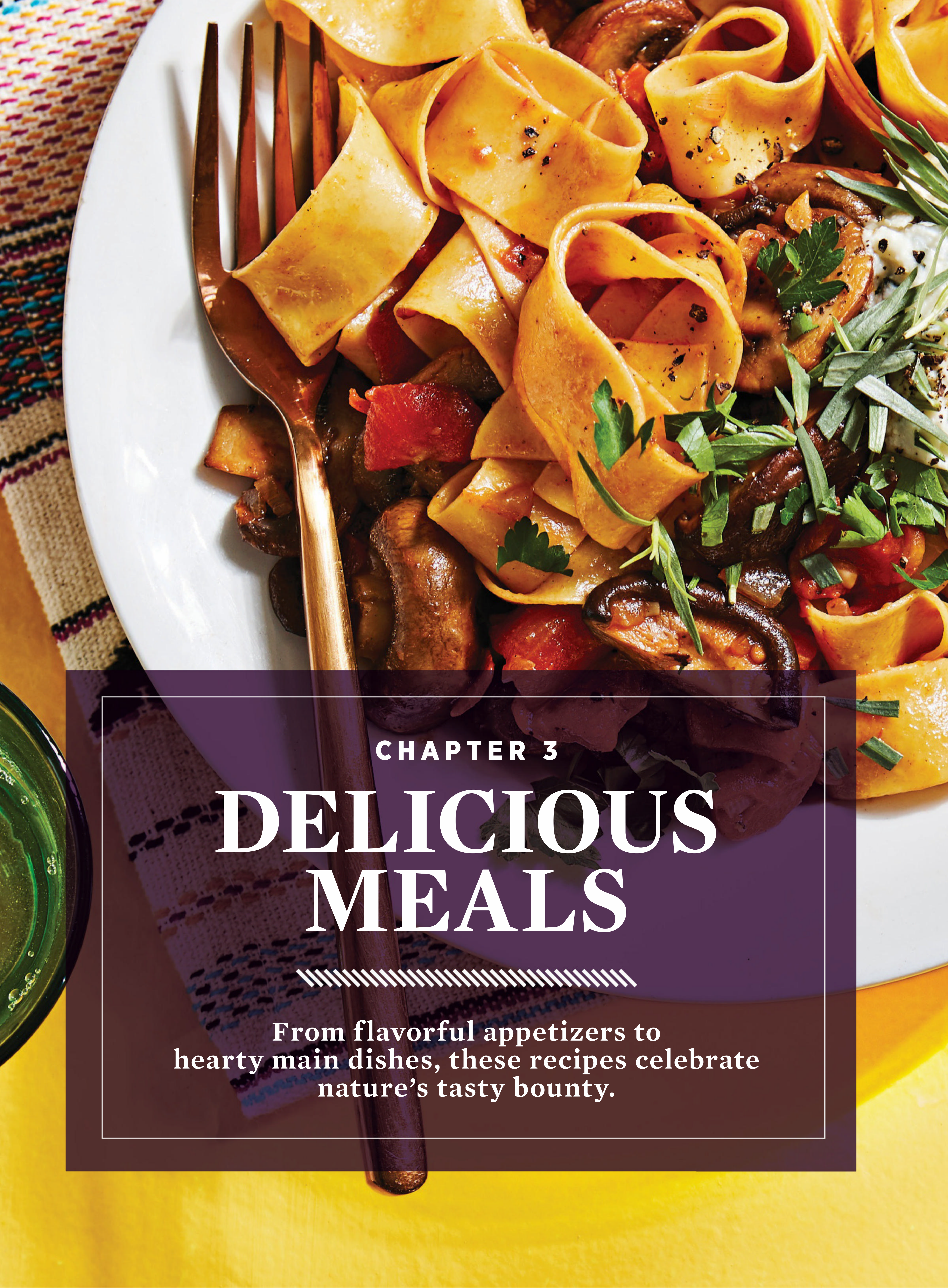
Kelley agrees, adding that adaptogens aren't the cure-all fix to stress, either. "While [adaptogens] can be a very important tool in your toolbox to help you through times of high stress, you still have to find other ways to balance your stress, such as meditation, an anti-inflammatory diet, and proper sleep," she says.

Most important, both experts stress communicating with your healthcare provider about your interest in adaptogens.

"Knowing why you are choosing a supplement is essential," says Feller. "[And you should] work with a qualified healthcare provider, such as an RD or your primary care provider, to find a safe supplementation routine." Additionally, Feller recommends looking for reputable brands that have been third-party tested to ensure the quality and purity of the product. "Because adaptogens can both up- and down-regulate body systems, it's important to remember that there can be unwanted drug interactions. For example, licorice can increase blood pressure and [amplify] ginkgo biloba's blood-thinning effect," she says.

Similarly, Kelley notes that some herbs—including ashwagandha—should not be taken while pregnant, and some can cause changes in blood pressure or be too stimulating. "In general, there are very safe, over-the-counter adaptogenic herbal blends, but it's best to work with a trained provider to get the best tools for your particular needs," she says.

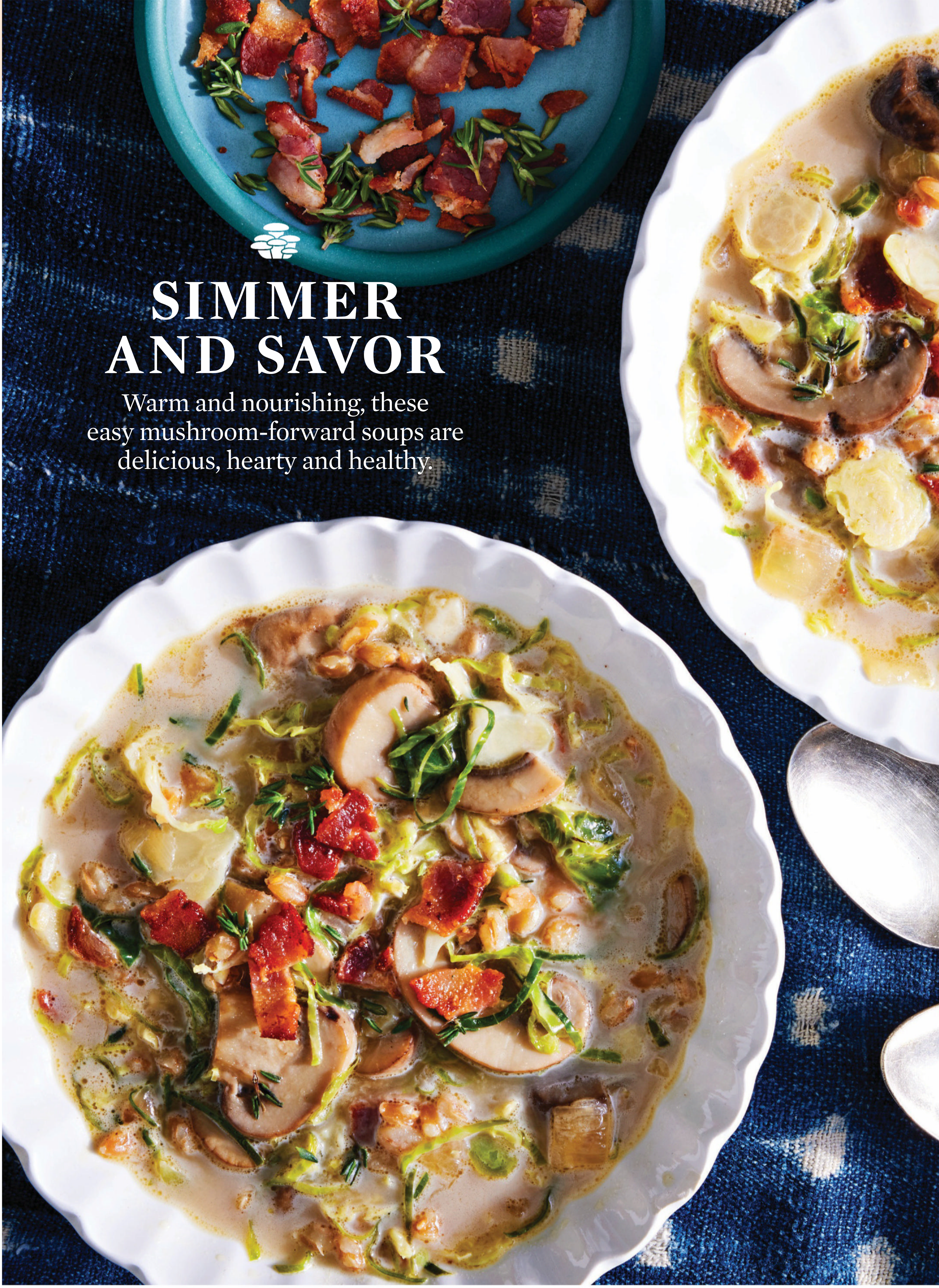
The quality of the adaptogenic supplement you opt for may vary greatly, since—like any supplement in the U.S.—they are less regulated than prescription medications. What's more, there is no substitute for established stress management and prevention techniques: Good sleep hygiene, meditation, journaling and a balanced diet are crucial. At the end of the day, it's important to remember that choosing an adaptogen (with the help of a healthcare provider) is just one part of the equation. ●



CHAPTER 3

DELICIOUS MEALS

From flavorful appetizers to
hearty main dishes, these recipes celebrate
nature's tasty bounty.



SIMMER AND SAVOR

Warm and nourishing, these easy mushroom-forward soups are delicious, hearty and healthy.

Brussels Sprout & Farro Soup with Bacon

ACTIVE: 45 MIN **TOTAL:** 45 MIN

This soup is umami-packed with bacon and mushrooms. Farro and brussels sprouts offer fiber and texture, while cream and a splash of vinegar balance the flavors. Serve it with hearty bread to sop up every delicious bite.

3 center-cut bacon slices, cut into ½-inch slices
1½ cups chopped sweet onion
1 tablespoon extra-virgin olive oil
1 (8-ounce) package sliced cremini mushrooms
1 tablespoon minced garlic
½ teaspoon salt
½ teaspoon ground pepper
5 cups lower-sodium chicken broth
½ cup pearled farro
1 bay leaf
2 cups shredded Brussels sprouts
¼ cup heavy cream
1 tablespoon sherry vinegar
2 teaspoons fresh thyme

1. Cook bacon in a large Dutch oven or large pot over medium heat until crisp, 5 to 6 minutes. Transfer to a paper-towel-lined plate, reserving the drippings in the pot. Crumble bacon and set aside.

2. Increase heat to medium-high and add onion to the pot. Reduce heat to medium and cook, stirring often, until the onion is softened and slightly golden brown, about 7 minutes. Add oil and mushrooms; cook, stirring occasionally, until the onion is golden brown and the mushrooms are softened, about 4 minutes. Add garlic, salt and pepper; cook, stirring often, until the garlic is fragrant, about 1 minute. Add broth, farro and bay leaf; bring to a boil over medium-high heat. Cover, reduce heat to medium and simmer, stirring occasionally, until the farro is tender, about 20 minutes. Add Brussels sprouts; cook, stirring occasionally, until the sprouts are tender, about 2 minutes. Stir in cream and vinegar. Remove and discard the bay leaf.

3. Divide the soup among 4 bowls; sprinkle evenly with the crumbled bacon and thyme. Serve immediately.

SERVES 4: 1½ CUPS EACH
CAL 263 **FAT** 11G (SAT 5G, MONO 4G, POLY 1G) **CHOL** 22MG **CARBS** 30G **TOTAL SUGARS** 7G **PROTEIN** 11G **FIBER** 4G **SODIUM** 499MG **POTASSIUM** 539MG **CALCIUM** 78MG **IRON** 2MG **MAGNESIUM** 25MG **NIACIN** 3MG **NIACIN EQUIVALENTS** 4MG **PHOSPHORUS** 129MG **ZINC** 1MG **SELENIUM** 16MCG **OMEGA-6 FATTY ACIDS** 1G **FOLATE** 60MG **VITAMIN A** 566IU **VITAMIN C** 43MG **VITAMIN D** 11IU **VITAMIN E** 2IU **VITAMIN K** 77MG

Wild Mushroom Soup

ACTIVE: 45 MIN **TOTAL:** 1 HR 15 MIN

This creamless—but creamy—soup recipe showcases the savory flavor of fresh morel mushrooms. If you can't find fresh or dried morels, try other dried mushrooms, such as shiitakes or creminis. You may want to use at least one ounce of dried mushrooms to keep the luscious flavor in this healthy soup. Serve it with crusty garlic bread.

- **12 ounces fresh morels, trimmed, or 1 ounce dried morels plus 12 ounces fresh cremini (baby bella) mushrooms**
- **5 cups low-sodium chicken or vegetable broth, or as needed**
- **2 tablespoons extra-virgin olive oil, plus more for garnish**
- **1 medium carrot, finely chopped**
- **1 stalk celery, finely chopped**
- **1 small onion, finely chopped**
- **1 tablespoon finely chopped garlic**
- **¼ cup Marsala**
- **1 cup diced peeled potato**
- **1½ teaspoons finely chopped fresh thyme**
- **1½ teaspoons kosher salt**
- **⅛ teaspoon crushed red pepper, or to taste**
- **Freshly ground pepper to taste**
- **¼ cup coarsely chopped flat-leaf parsley**

1. If using fresh morels, cut in half and briefly swish in a large bowl of tepid water. Drain and repeat to remove all the dirt. Gently but thoroughly pat the morels dry. (If using dried morels, soak in 2 cups warm water for 30 minutes. Strain in a cheesecloth-lined sieve, and reserve the soaking liquid. Add enough broth to the soaking liquid to equal 5 cups.) Coarsely chop the morels and creminis.

2. Heat oil in a large pot over medium heat. Add carrot, celery and onion; cover and cook, stirring occasionally, until the vegetables are tender, 8 to 10 minutes. Add garlic and cook, stirring frequently, for 30 seconds. Add Marsala and cook for 1 minute more.

3. Add the broth, the fresh mushrooms (and dried, if using), potato, thyme, salt and crushed red pepper. Bring to a boil. Reduce heat and simmer, uncovered, until the potato is tender, 15 to 20 minutes.

4. Puree the soup with an immersion blender or in a regular blender or food processor. Stir in pepper. Serve garnished with parsley and a drizzle of oil, if desired.

SERVES 8: ¾ CUP EACH
CAL 108 **FAT** 5G (SAT 1G) **CARBS** 11G **TOTAL SUGARS** 2G **PROTEIN** 5G **FIBER** 2G **SODIUM** 427MG **POTASSIUM** 443MG **CALCIUM** 38MG **IRON** 6MG **MAGNESIUM** 18MG **FOLATE** 14MCG **VITAMIN A** 1474IU **VITAMIN C** 6MG

Tofu, Mushroom & Bok Choy Soba Noodle Bowls

ACTIVE: 20 MIN

TOTAL: 20 MIN

Soba noodles are made with whole-grain buckwheat, upping the fiber count and adding nutty flavor to these brothy bowls. Thick and chewy udon noodles make a good alternative.

- **3 tablespoons canola oil, divided**
- **2 teaspoons toasted sesame oil**
- **1 teaspoon grated fresh ginger**
- **2 cloves garlic, grated**
- **4 scallions, sliced, greens and whites separated, divided**
- **1 serrano pepper, thinly sliced**
- **4 cups low-sodium no-chicken broth**
- **2 tablespoons reduced-sodium tamari or soy sauce**
- **2 heads baby bok choy, thinly sliced**
- **5 ounces sliced shiitake mushroom caps**
- **¼ teaspoon salt**
- **8 ounces buckwheat soba or udon noodles**
- **1 (14-ounce) package extra-firm tofu, drained and cut into bite-size cubes**
- **Fresh cilantro for garnish**

1. Bring a medium saucepan of water to a boil.

2. Heat 1 tablespoon canola oil in a large saucepan over medium heat. Add sesame oil, ginger, garlic, scallion whites and serrano and cook until fragrant, about 1 minute. Add broth and tamari (or soy sauce) and bring to a boil. Cover and simmer while you prepare vegetables and noodles.

3. Heat the remaining 2 tablespoons canola oil in a large skillet or flat-bottom wok over high heat. Add bok choy and shiitakes and cook, stirring occasionally, until well browned, about 8 minutes. Sprinkle with salt. Remove from heat.

4. Cook noodles in the boiling water according to package directions. Drain and divide among 4 serving bowls. Top with the vegetables and tofu and ladle on the hot broth. Top with scallion greens and garnish with cilantro, if desired.

SERVES 4: 2 CUPS EACH
CAL 459 **FAT** 19G (SAT 2G)
CARBS 54G **TOTAL SUGARS** 6G
PROTEIN 20G **FIBER** 7G
SODIUM 706MG **POTASSIUM** 576MG
NIACIN EQUIVALENTS 2MG
VITAMIN A 4301IU

Vegan Cream of Mushroom Soup

ACTIVE: 50 MIN **TOTAL:** 50 MIN

There's no cream in this silky vegan soup. Pureed potatoes give it its creamy texture. Be sure to use Yukon Gold—russets don't provide quite the right texture.

4 tablespoons extra-virgin olive oil, divided
1 cup diced shallots
½ cup diced celery
5 cups sliced shiitake mushroom caps (about 10 ounces), divided
5 cups sliced baby bella mushrooms (about 10 ounces), divided
½ cup dry sherry
3 cloves garlic, minced
4 cups diced peeled Yukon Gold potatoes (about 1 pound)
½ teaspoon dried thyme
3 cups "no-chicken broth" or mushroom broth
1 cup water
½ cup walnuts, finely chopped
Pinch of salt
2 teaspoons sherry vinegar
½ teaspoon ground pepper
2 tablespoons sliced fresh chives

1. Heat 3 tablespoons oil in a large pot over medium heat. "Add shallots and celery; cook, stirring occasionally, until tender, about 3 minutes. Add 4 cups each shiitakes and baby bellas, sherry and garlic; cook, stirring occasionally, until the mushrooms are soft and the liquid has evaporated, about 5 minutes. Stir in potatoes and thyme; cook for 1 minute. Add broth and water. Bring to a boil. Reduce heat to maintain a simmer and cook, stirring occasionally, until the vegetables are very soft, about 20 minutes.

2. Meanwhile, coarsely chop the remaining 2 cups mushrooms. Heat the remaining 1 tablespoon oil in a medium skillet over medium heat. Add the mushrooms and cook, stirring often, until soft, about 2 minutes. Add the walnuts and salt. Cook, stirring occasionally, until hot, about 1 minute more.

3. Puree the soup with an immersion blender or in a regular blender (in batches, if necessary) until very smooth. (Use caution when blending hot liquids.) Stir in vinegar and pepper.

4. Serve the soup topped with the mushroom-walnut mixture and chives.

SERVES 4: 2 CUPS EACH
CAL 407 **FAT** 23G (SAT 3G) **CARBS** 41G **TOTAL SUGARS** 6G **PROTEIN** 9G **FIBER** 6G **SODIUM** 462MG **POTASSIUM** 1149MG **CALCIUM** 68MG **IRON** 2MG **MAGNESIUM** 77MG **FOLATE** 69MCG **VITAMIN A** 609IU **VITAMIN C** 13MG

Chicken & Bok Choy Soup with Ginger & Mushrooms

ACTIVE: 30 MIN

TOTAL: 1 HR 30 MIN

The dried-shiitake soaking liquid is full of flavor, so it's added to the base of this soup, giving it a boost of umami and depth. Then the mushrooms are sliced and added.

- **½ ounce (about ½ cup) dried shiitake or mixed dried mushrooms**
- **3 cups boiling water**
- **1 tablespoon peanut oil or canola oil**
- **2 cups diced onion**
- **3 cloves garlic, thinly sliced**
- **6 ⅛-inch-thick slices peeled fresh ginger**
- **6 cups reduced-sodium chicken broth**
- **¼ cup reduced-sodium soy sauce**
- **1 2- to 3-inch cinnamon stick**
- **1 whole star anise**
- **1 teaspoon freshly ground pepper**
- **2 pounds boneless, skinless chicken thighs, trimmed and cut into 1-inch pieces**
- **1 bulb fennel, cored and cut into 1-inch pieces**
- **8 scallions, whites cut into 2-inch pieces and greens chopped, divided**
- **1 pound bok choy, preferably baby bok choy, white stems sliced lengthwise and greens chopped, divided**
- **2 cups (4 ounces) mung bean sprouts**
- **½ cup chopped fresh cilantro**
- **2 teaspoons toasted sesame oil**
- **Lime wedges for garnish**

1. Place mushrooms in a heatproof measuring cup and cover with boiling water. Soak for at least 30 minutes or up to several hours. Remove the mushrooms from the water, remove and discard stems (if any) and cut into ⅛-inch slices; set aside. Strain the soaking liquid and reserve.

2. Heat oil in a large soup pot or Dutch oven over medium heat. Add onion, garlic and ginger and cook, stirring, for 5 minutes. Add in the reserved mushroom liquid, broth, soy sauce, cinnamon stick, star anise and pepper. Bring to a boil. Reduce to a simmer and stir in chicken. Simmer for 20 minutes.

3. Stir in fennel, scallion whites and the reserved mushrooms and cook for 5 minutes. Add bok choy stems, return to a simmer and cook for 3 minutes more. Stir in bok choy greens and bean sprouts. Cook until the greens are just wilted, about 2 minutes more.

4. Discard the cinnamon stick and star anise. Ladle the soup into bowls. Garnish each bowl with scallion greens, cilantro and a ¼-teaspoon drizzle of sesame oil. Serve with lime wedges, if desired.

SERVES 8: ABOUT 1¾ CUPS EACH
CAL 257 **FAT** 11G (SAT 3G) **CHOL** 76MG
CARBS 13G **TOTAL SUGARS** 5G
PROTEIN 27G **FIBER** 3G **SODIUM** 789MG
POTASSIUM 832MG **CALCIUM** 107MG
IRON 3MG **MAGNESIUM** 50MG **FOLATE** 79MCG **VITAMIN A** 2920IU **VITAMIN C** 29MG

MEATLESS MAINS

These plant-based dinners feature all sorts of mushrooms.

Chickpea Frittata

ACTIVE: 10 MIN **TOTAL:** 30 MIN

This vegan frittata uses chickpea flour instead of eggs, and golden-hued turmeric helps fool the eye. The tomatoes bring a burst of flavor with each bite, while the mushrooms add a savory note. The black salt is what gives this vegan frittata an egg-like flavor, but you can use regular salt too.

- 1 cup chickpea flour
- 2 tablespoons nutritional yeast
- 1 teaspoon baking powder
- ½ teaspoon kala namak (black salt) or regular salt
- ¼ teaspoon ground turmeric
- ¼ teaspoon ground pepper
- 1 cup water
- 2 tablespoons lemon juice
- 1 teaspoon reduced-sodium tamari or soy sauce
- 3 teaspoons extra-virgin olive oil, divided
- 1 cup thinly sliced red onion
- 1 cup sliced cremini mushrooms
- 2 teaspoons finely chopped garlic
- 1 cup grape tomatoes, halved lengthwise
- 1 cup packed fresh spinach, roughly chopped
- Chives for garnish (optional)

1. Whisk chickpea flour, nutritional yeast, baking powder, kala namak (or salt), turmeric and pepper together in a medium bowl. Add water, lemon juice and tamari (or soy sauce); whisk until smooth.

2. Heat 1½ teaspoons oil in a medium nonstick or cast-iron skillet over medium heat. Add onion, mushrooms and garlic; cook, stirring occasionally, until the vegetables are soft, 5 to 6 minutes. Add to the chickpea mixture, along with the tomatoes and spinach; stir until evenly combined. Do not wipe the pan clean.

3. Add remaining 1½ teaspoons of the oil to the pan; heat over medium heat. Add the chickpea mixture; spread in an even layer. Cover and reduce heat to medium-low; cook, undisturbed, until firm and set, 15 to 20 minutes. Remove from heat. Garnish with chives, if desired.

SERVES 6: 1 SLICE EACH
CAL 107 **FAT** 4G (SAT 1G) **CARBS** 15G **TOTAL SUGARS** 3G **PROTEIN** 5G **FIBER** 3G **SODIUM** 338MG **POTASSIUM** 285MG **NIACIN EQUIVALENTS** 5MG **VITAMIN A** 643IU

Farro Risotto with Mushrooms & Greens

ACTIVE: 50 MIN

TOTAL: 1 HR

TO MAKE AHEAD: Refrigerate cooked groats and farro (Step 1) for up to 2 days.

This dish uses up stems from leafy greens, flowers from bolted herbs, and other odds and ends from produce.

- **1 cup oat groats, rinsed**
- **Pinch of salt plus ½ teaspoon, divided**
- **1 cup pearled or semi-pearled farro**
- **1 bunch greens, such as kale or chard**
- **3 tablespoons extra-virgin olive oil**
- **¼ cup minced shallots**
- **2 cups shiitake mushrooms, stemmed and sliced**
- **2 cups low-sodium vegetable broth**
- **1 tablespoon light miso**
- **½ cup shredded aged Gouda cheese**
- **2 tablespoons unsalted butter**
- **⅛ teaspoon ground white pepper**
- **Sliced hakurei turnips and edible flowers for garnish**

1. Bring a large pot of water to a boil. Add groats and a pinch of salt; cook for 10 minutes. Add farro; cook until both grains are tender and soft, 20 to 25 minutes more. Drain; set aside.

2. Meanwhile, separate stems from greens. Dice the stems and chop the greens.

3. Heat oil in a large skillet over medium heat. Add shallots and cook, stirring occasionally, until starting to brown, about 4 minutes. Add shiitakes and the greens stems; cook, stirring occasionally, 3 to 5 minutes. Add the chopped greens in batches and cook, stirring, until softened, 3 to 5 minutes. Transfer half the mixture to a small bowl and cover to keep warm.

4. Stir the cooked groats and farro, broth and miso into the pan. Adjust heat to maintain a simmer and cook until the liquid is reduced and the risotto thickens, about 10 minutes.

5. Add cheese, butter, the remaining ½ teaspoon salt and white pepper and cook, stirring, until the cheese is melted, about 1 minute more. Serve the risotto topped with the mushroom mixture. Garnish with turnips and edible flowers, if desired.

SERVES 6: 1 CUP RISOTTO AND ½ CUP VEGETABLES
CAL 383 **FAT** 17G (SAT 5G) **CHOL** 21MG
CARBS 48G **TOTAL SUGARS** 3G
PROTEIN 14G **FIBER** 8G; **SODIUM** 474MG
POTASSIUM 308MG

Mushroom French Dip

ACTIVE: 30 MIN **TOTAL:** 30 MIN

Meaty portobello mushrooms have just the right amount of earthy, savory flavor and the perfect texture to replace beef in these vegetarian French dip sandwiches.

3 tablespoons extra-virgin olive oil, divided
1 medium onion, thinly sliced
2 cloves garlic, thinly sliced
4 large portobello mushroom caps, gills removed, cut into ¼-inch-thick slices
12 ounces oyster or shiitake mushrooms, trimmed and coarsely chopped
1 tablespoon Dijon mustard
1 tablespoon chopped fresh thyme
1½ cups reduced-sodium vegetable broth or mushroom broth
¼ cup dry sherry
4 small whole-wheat hoagie rolls, halved lengthwise
4 slices provolone cheese

1. Heat 1 tablespoon oil in a large cast-iron or heavy skillet over high heat. Add onion and cook, stirring frequently, until lightly browned, 3 to 4 minutes. Add garlic and cook until fragrant, about 1 minute. Transfer to a medium bowl.

2. Add 1 tablespoon oil to the pan. Add portobellos and cook, stirring occasionally, until browned, 5 to 6 minutes. Transfer to the bowl. Add the remaining 1 tablespoon oil and oyster (or shiitake) mushrooms to the pan. Cook, stirring occasionally, until browned, 5 to 6 minutes. Return the portobellos and onion to the pan. Stir in mustard and thyme; cook for 1 minute. Stir in broth and sherry and simmer for 5 minutes.

3. Position a rack in upper third of oven; preheat broiler to high.

4. Scoop out most of the inside of the rolls (reserve for making breadcrumbs, if desired). Place the rolls cut-side up on a baking sheet. Using a slotted spoon, divide the mushroom mixture among the bottom halves of the rolls (reserve the sauce). Top with cheese.

5. Broil until the cheese is bubbly and lightly browned, 1 to 2 minutes. Place the top halves of the rolls on the sandwiches and serve with the sauce.

SERVES 4: 1 SANDWICH AND 3 TBSP. SAUCE EACH
CAL 402 **FAT** 20G (SAT 6G) **CHOL** 15MG **CARBS** 43G **TOTAL SUGARS** 10G **PROTEIN** 16G **FIBER** 8G **SODIUM** 649MG **POTASSIUM** 925MG **NIACIN EQUIVALENTS** 10MG **VITAMIN A** 440IU

Mushroom Sandwich with Pickled Onion

ACTIVE: 55 MIN **TOTAL:** 5 HR

This sandwich is a specialty at Dad's Luncheonette in Half Moon Bay, California, where chef-owner Scott Clark makes it with local maitake mushrooms. Using ghee to cook the sandwich components imparts a nutty flavor you wouldn't get using butter.

Pickled Onion

1½ tablespoons crushed red pepper
1 tablespoon whole black peppercorns
1 clove garlic, smashed and peeled
1 bay leaf
1 cup white balsamic vinegar
1 cup granulated sugar
1 medium red onion, thinly sliced

Sandwich

3 tablespoons mayonnaise
1 tablespoon spicy brown mustard
1 teaspoon vegetarian Worcestershire sauce
5 tablespoons ghee, divided
8 slices whole-wheat bread
14 ounces maitake mushrooms
¼ teaspoon ground pepper
⅛ teaspoon salt
4 slices sharp Cheddar cheese
4 large eggs
8 lettuce leaves, preferably red oak

1. To prepare pickled onion: Toast crushed red pepper, peppercorns, garlic and bay leaf in a medium saucepan over medium-low heat until fragrant, 1 to 3 minutes. Add vinegar; bring to a boil over medium-high heat. Add sugar and stir until dissolved. Place onion in a medium nonreactive bowl and pour the hot liquid over it. Let cool to room temperature, about 1 hour. Cover and refrigerate for 4 hours and up to 1 week.

2. To prepare sandwich: Combine mayonnaise, mustard and Worcestershire in a small bowl.

3. Heat 1 tablespoon ghee in a large nonstick skillet over medium-high heat. Add 2 or 3 bread slices and cook until browned on one side only, 1 to 2 minutes, adjusting heat as necessary. Transfer to a plate. Repeat 2 or 3 times, using 2 tablespoons ghee and the remaining bread.

4. Add mushrooms, pepper, salt and 1 tablespoon ghee to the pan. Cook, without stirring, until browned and crisp, 2 to 3 minutes. Flip the mushrooms and press with a spatula to flatten. Top with cheese and cook until melted, about 3 minutes more. Transfer to a plate.

5. Add the remaining 1 tablespoon ghee to the pan over medium heat. Crack eggs into the pan, cover and cook to desired doneness, 2 to 4 minutes.

6. Spread the sauce on the untoasted sides of the bread. Layer the pickled onion, mushrooms, eggs and lettuce between the bread slices.

SERVES 4: 1 SANDWICH EACH
CAL 623 **FAT** 38G (SAT 17G) **CHOL** 252MG **CARBS** 51G **TOTAL SUGARS** 21G **PROTEIN** 21G **FIBER** 7G **SODIUM** 674MG **POTASSIUM** 536MG **NIACIN EQUIVALENTS** 9MG **VITAMIN A** 733IU

Mushroom & Carolina Gold Rice Stuffed Cabbage Rolls

ACTIVE: 1 HR **TOTAL:** 2 HR 30 MIN

TO MAKE AHEAD: Prepare through Step 5 and refrigerate for up to 2 days.

At Fork and Plough in Greenville, South Carolina, chef Shawn Kelly creates dishes packed with herbs and veggies from his partner Greenbrier Farms. If you avoid cheese made with rennet, look for vegetarian Parmesan cheese, which is made without it.

Marinara

3 tablespoons extra-virgin olive oil
2 cups diced yellow onion
2 cloves garlic, sliced
2 tablespoons red wine
1 (15-ounce) can no-salt-added diced tomatoes
½ cup tomato paste
½ teaspoon dried oregano
½ teaspoon crushed red pepper
⅛ teaspoon salt
½ cup chopped fresh basil

Cabbage Rolls

12 leaves green cabbage
3 tablespoons extra-virgin olive oil, divided
1 cup diced onion
3 cups diced mixed mushrooms (cremini, oyster, button and/or shiitake)
½ cup diced red bell pepper
½ cup diced zucchini
3 cloves garlic, chopped
¼ teaspoon ground pepper
⅛ teaspoon salt
1 large egg, lightly beaten
1 cup cooked Carolina Gold (see Tip) or brown rice
1 cup chopped fresh herbs, such as basil, parsley, oregano, mint and/or cilantro
1 cup shredded Gouda cheese, divided
½ cup grated Parmesan cheese
1½ teaspoons grated lemon zest
1 tablespoon lemon juice
Dash of hot sauce

1. To prepare marinara: Heat 3 tablespoons oil, 2 cups onion and sliced garlic in a medium saucepan over medium-low heat. Cook, stirring occasionally, until soft and golden brown, about 15 minutes. Add wine; cook 1 minute. Add tomatoes, tomato paste, oregano, crushed red pepper and ⅛ teaspoon salt. Adjust heat to maintain a simmer, cover and cook, stirring occasionally, for 1 hour. Remove from heat and stir in basil.

2. Meanwhile, prepare cabbage rolls: Preheat oven to 400°F. Coat a 9-by-13-inch baking dish with cooking spray.

3. Bring a large pot of water to a boil. Add cabbage leaves and cook for 1 minute. Drain and rinse with cold water. Pat dry.

4. Heat 1 tablespoon oil in a large skillet over medium-high heat. Add onion and cook, stirring occasionally, until lightly browned, about 3 minutes. Add the remaining 2 tablespoons oil and mushrooms; cook, stirring occasionally, until the mushrooms are brown, about 5 minutes. Add bell pepper, zucchini, garlic, pepper and salt and cook, stirring often, until tender, 3 to 5 minutes. Transfer to a large bowl and let cool for 10 minutes.

5. Add egg, rice, herbs, ½ cup Gouda, Parmesan, lemon zest, lemon juice and hot sauce to the vegetables and mix well.

6. Spoon about ⅓ cup filling into each cabbage leaf and roll up, tucking in the sides. Arrange the cabbage rolls seam-side down in the prepared baking dish and spread the marinara over the top. Sprinkle with the remaining ½ cup Gouda.

7. Bake until bubbling around the edges and the cheese has melted, about 25 minutes.

Tip: Carolina Gold rice is a flavorful long-grain variety that first arrived in the Carolinas with enslaved people in the 1600s. The yellow-hued crop became known as “the golden seed.” It has a fluffy texture that’s a favorite in low-country cooking. Find it with other rices at the grocery store or online.

SERVES 6: 2 ROLLS EACH
CAL 386 **FAT** 22G (SAT 7G) **CHOL** 58MG
CARBS 33G **TOTAL SUGARS** 14G
PROTEIN 13G **FIBER** 7G **SODIUM** 497MG
POTASSIUM 970MG

Roasted Mushroom Salad with Sherry Dressing

ACTIVE: 15 MIN **TOTAL:** 30 MIN

Adding the sherry and garlic directly to the hot baking sheet in Step 4 cooks off the alcohol and mellows the garlic. It also lets you incorporate the tasty browned bits from the pan into the salad. Frisée provides a nice textural contrast to the tender mushrooms.

1	**pound mixed mushrooms, such as cremini, shiitake caps, oyster and/or beech, halved or quartered, depending on size**
1	**small onion, halved and sliced**
3	**tablespoons extra-virgin olive oil, divided**
¼	**teaspoon salt, divided**
2	**tablespoons lemon juice**
1½	**teaspoons chopped fresh thyme, or ½ teaspoon dried**
¼	**teaspoon ground pepper**
3	**tablespoons dry sherry**
2	**cloves garlic, minced**
8	**cups bitter salad greens, such as frisée, arugula and/or baby dandelion greens**
2	**tablespoons shaved Parmesan cheese**

1. Preheat oven to 450°F.

2. Toss mushrooms, onion, 1 tablespoon oil and ⅛ teaspoon salt in a large bowl. Spread in an even layer on a large rimmed baking sheet. Roast, stirring occasionally, until soft and golden brown, 15 to 20 minutes.

3. Meanwhile, whisk the remaining 2 tablespoons oil, lemon juice, thyme, the remaining ⅛ teaspoon salt and pepper in the large bowl.

4. Remove the mushroom mixture from the oven. Immediately add sherry and garlic to the pan, stirring and scraping up any browned bits. Scrape the mixture into the bowl with the dressing. Add greens and toss to coat. Serve the salad sprinkled with Parmesan.

SERVES 6: 1½ CUPS EACH
CAL 107 **FAT** 8G (SAT 1G) **CHOL** 1MG **CARBS** 6G **TOTAL SUGARS** 3G **PROTEIN** 4G **FIBER** 2G **SODIUM** 141MG **POTASSIUM** 395MG **CALCIUM** 74MG **IRON** 1MG **MAGNESIUM** 25MG **FOLATE** 47MCG **VITAMIN A** 774IU **VITAMIN C** 10MG

Mushroom Bourguignon

ACTIVE: 35 MIN
TOTAL: 50 MIN

Carrots and parsnips mingle with meaty mushrooms in this vegetarian spin on the classic French beef stew. Feel free to substitute other root vegetables, such as rutabaga and turnip. Serve over whole-wheat pasta, and top with chopped parsley or chives.

- **3 tablespoons butter, divided**
- **1 tablespoon extra-virgin olive oil**
- **2 stalks celery, sliced**
- **1 cup chopped parsnip (½ inch dice)**
- **1 cup chopped carrot (½ inch dice)**
- **1 pound mixed mushrooms, halved**
- **1 large shallot, minced**
- **3 cloves garlic, minced**
- **1 bay leaf**
- **½ teaspoon dried thyme**
- **¾ teaspoon salt, divided**
- **¾ teaspoon ground pepper, divided**
- **2 tablespoons tomato paste**
- **1 tablespoon all-purpose flour**
- **1½ cups dry red wine**
- **¼ cup cognac or brandy**
- **1½ cups low-sodium vegetable or mushroom broth**
- **1½ cups frozen pearl onions, thawed**

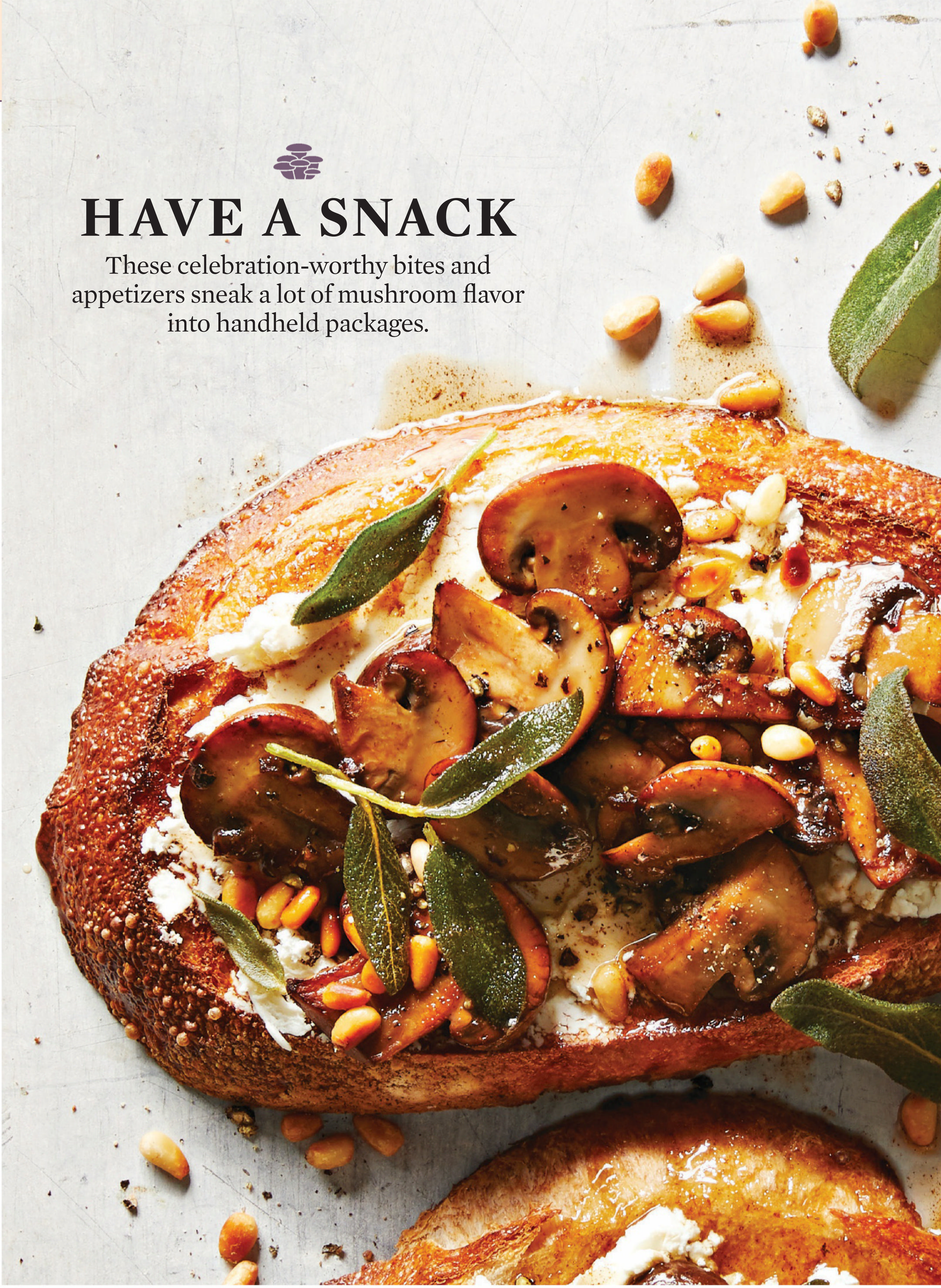
1. Heat 2 tablespoons butter and oil in a large pot over medium-high heat. Add celery, parsnip and carrot; cook, stirring occasionally, until the vegetables start to soften, about 4 minutes. Reduce heat to medium and add mushrooms, shallot, garlic, bay leaf, thyme and ½ teaspoon each salt and pepper. Cook, stirring, until the mushrooms soften, about 5 minutes.

2. Stir in tomato paste; cook for 30 seconds. Sprinkle flour over the vegetables and cook, stirring, for 30 seconds more. Add wine and cognac (or brandy); increase heat to medium-high and cook, scraping up any browned bits, until the liquid is reduced by about half, 2 to 3 minutes.

3. Add broth and bring to a boil. Reduce heat to maintain a simmer, partially cover and cook until the vegetables are tender, about 10 minutes. Stir in pearl onions. Return to a simmer and cook, stirring occasionally, for 5 minutes.

4. Remove from heat and stir in the remaining 1 tablespoon butter and ¼ teaspoon each salt and pepper.

SERVES 5: 1 CUP EACH
CAL 267 **FAT** 10G (SAT 5G) **CHOL** 18MG **CARBS** 23G **TOTAL SUGARS** 8G **PROTEIN** 4G **FIBER** 4G **SODIUM** 492MG **POTASSIUM** 899MG **CALCIUM** 72MG **IRON** 2MG **MAGNESIUM** 40MG **FOLATE** 71MCG **VITAMIN A** 4793IU **VITAMIN C** 9MG



HAVE A SNACK

These celebration-worthy bites and appetizers sneak a lot of mushroom flavor into handheld packages.

Goat Cheese Crostini with Mushrooms & Brown Butter

ACTIVE: 20 MIN **TOTAL:** 20 MIN

Serve these savory herbed crostini with a big green salad. Looking for a heartier meal? Top each toast with a poached or fried egg.

2	tablespoons extra-virgin olive oil
12	small fresh sage leaves
12	ounces cremini mushrooms, quartered
2	tablespoons minced shallot
¼	teaspoon salt
¼	teaspoon ground pepper
1½	tablespoons butter
4	ounces goat cheese
4	slices crusty whole-wheat bread, toasted
4	teaspoons pine nuts, toasted

1. Heat oil in a medium skillet over medium heat. Add sage and cook until crisp, 2 to 4 seconds per side. Using a slotted spoon, transfer the sage to a paper-towel-lined plate.

2. Add mushrooms and shallot to the pan, season with salt and pepper and cook, stirring occasionally, until soft and lightly browned, about 5 minutes. Using a slotted spoon, transfer the mushrooms to a bowl.

3. Add butter to the pan and cook, scraping up any browned bits, until the butter starts to brown, about 30 seconds. Pour the butter over the mushrooms and stir to combine.

4. Spread goat cheese on each toast. Top with the mushrooms, pine nuts and sage.

SERVES 4: 1 TOAST EACH
CAL 313 **FAT** 18G (SAT 6G) **CHOL** 17MG
CARBS 26G **TOTAL SUGARS** 6G
PROTEIN 12G **FIBER** 3G **SODIUM** 431MG **NIACIN EQUIVALENTS** 4.7MG **VITAMIN A** 420IU

Cheesy Mushroom, Leek & Prosciutto Toasts

ACTIVE: 20 MIN **TOTAL:** 20 MIN

Salty Kalamata olives and prosciutto add a snap of flavor to the sautéed mushrooms and leeks topping these toasts. Gooey mozzarella holds it all together.

- **4 slices multigrain country bread (8 ounces total)**
- **3 tablespoons extra-virgin olive oil, divided**
- **½ clove garlic**
- **4 cups sliced mixed mushrooms (10 ounces)**
- **1 medium leek, rinsed well, patted dry and thinly sliced (1½ cups)**
- **⅛ teaspoon ground pepper**
- **Pinch of salt**
- **¼ cup pitted Kalamata olives, coarsely chopped**
- **2 thin slices prosciutto (1 ounce), halved and quartered**
- **2 ounces thinly sliced fresh mozzarella cheese, torn**
- **4 teaspoons chopped fresh parsley**

1. Position rack in upper third of oven; preheat broiler to high. Brush bread with 1 tablespoon oil. Broil until golden and crispy on one side, about 2 minutes. When cool enough to handle, rub the toasted side with the cut side of the garlic. (Discard leftover garlic.)

2. Heat the remaining 2 tablespoons oil in a large skillet over medium-high heat. Add mushrooms in an even layer. Cook, without stirring, for 4 minutes. Add leek, pepper and salt and cook, stirring occasionally, until the mushrooms are golden brown and the leek is tender, 4 to 5 minutes more.

3. Divide the mushroom mixture, olives, prosciutto and mozzarella over the toasted sides of the bread. Broil until the cheese is melted, about 2 minutes. Sprinkle with parsley.

SERVES 4: 1 TOAST EACH
CAL 358 **FAT** 19G (SAT 4G) **CHOL** 16MG **CARBS** 33G **TOTAL SUGARS** 6G **PROTEIN** 16G **FIBER** 6G **SODIUM** 659MG **POTASSIUM** 472MG **IRON** 3MG **MAGNESIUM** 65MG **NIACIN EQUIVALENTS** 5MG **ZINC** 2MG **OMEGA-6 FATTY ACIDS** 2G **FOLATE** 79MG **VITAMIN A** 762IU **VITAMIN C** 7MG **VITAMIN D** 10IU **VITAMIN E** 3IU **VITAMIN K** 37MG

Crispy Baked Ravioli with Red Pepper & Mushroom Bolognese

ACTIVE: 35 MIN **TOTAL:** 35 MIN

Legend has it that toasted ravioli originated with a St. Louis chef dropping the pasta in hot oil instead of water. Here, we lighten it up by baking instead of frying and adding a serving of vegetables in the form of a mushroom-based sauce.

Cooking spray
1 cup panko breadcrumbs, preferably whole-wheat
¼ cup finely grated Parmesan cheese, plus more for serving
½ teaspoon Italian seasoning
1 large egg
1 tablespoon water
1 pound fresh cheese ravioli
1 tablespoon extra-virgin olive oil
1 large red bell pepper, diced
2 cups chopped mushrooms
⅓ cup walnuts, finely chopped
2 cups low-sodium marinara sauce

1. Preheat oven to 425°F. Place a wire rack on a rimmed baking sheet and coat with cooking spray.
2. Combine breadcrumbs, Parmesan and Italian seasoning in a shallow dish. Whisk egg and water in a separate shallow dish. Dip ravioli in the egg, letting excess drip off, then coat in the breadcrumb mixture, pressing to adhere. Place on the wire rack. Lightly coat the ravioli with cooking spray.
3. Bake the ravioli until golden brown and crispy, about 15 minutes.
4. Meanwhile, heat oil in a large saucepan over medium-high heat. Add bell pepper and mushrooms; cook, stirring, until softened, about 4 minutes. Add walnuts and cook, stirring, for 1 minute. Add marinara and cook until hot, about 2 minutes.
5. Serve the ravioli with the sauce and more Parmesan, if desired.

SERVES 4: 6 RAVIOLI AND ¾ CUP SAUCE EACH
CAL 479 **FAT** 23G (SAT 6G) **CHOL** 93MG **CARBS** 49G **TOTAL SUGARS** 9G **PROTEIN** 20G **FIBER** 6G **SODIUM** 501MG **POTASSIUM** 267MG **CALCIUM** 240MG **IRON** 3MG **MAGNESIUM** 27MG **FOLATE** 40MCG **VITAMIN A** 2465IU; **VITAMIN C** 58MG

Crispy Smashed Balsamic-Parmesan Mushrooms

ACTIVE: 15 MIN **TOTAL:** 40 MIN

These crispy smashed mushrooms take up the flavors of sweet and tangy balsamic vinegar and savory Parmesan cheese. Making an X in each cap helps them smash evenly.

- **1 pound large mushrooms (12 to 14)**
- **2 tablespoons extra-virgin olive oil**
- **1 teaspoon dried thyme**
- **½ teaspoon garlic powder**
- **¼ teaspoon salt**
- **¼ teaspoon ground pepper**
- **1 tablespoon balsamic vinegar**
- **¼ cup grated Parmesan cheese**

1. Position racks in upper and lower thirds of oven. Preheat to 450°F.

2. Wipe mushrooms clean and trim stems flush with caps. Score a ¼-inch X across the cap of each mushroom. Place the mushrooms in a large bowl. Add oil, thyme, garlic powder, salt and pepper; toss until the oil is absorbed. Arrange the mushrooms, stem-side down, on a large rimmed baking sheet. Roast on the lower rack until browned and very soft, 18 to 20 minutes.

3. When the mushrooms are done roasting, remove them from the oven and turn the broiler to high. Turn the mushrooms stem-side up on the pan and use the bottom of a mason jar or sturdy glass to flatten each mushroom. Drizzle with vinegar and sprinkle with Parmesan. Broil on the upper rack until the mushrooms are crispy on the edges and the cheese has melted, 2 to 4 minutes.

SERVES 4: ABOUT 3 MUSHROOMS EACH
CAL 115 **FAT** 9G (SAT 2G) **CHOL** 4MG **CARBS** 6G **TOTAL SUGARS** 3G **PROTEIN** 5G **FIBER** 1G **SODIUM** 243MG **POTASSIUM** 383MG **CALCIUM** 53MG **IRON** 1MG **MAGNESIUM** 14MG **NIACIN** 4MG **PHOSPHORUS** 132MG **ZINC** 1MG **OMEGA-6 FATTY ACIDS** 1G **FOLATE** 21MG **VITAMIN A** 59IU **VITAMIN C** 3MG **VITAMIN D** 9IU **VITAMIN E** 1IU **VITAMIN K** 5MG

Oysters with Roasted Shiitake Mignonette

ACTIVE: 35 MIN **TOTAL:** 35 MIN

Oysters and mushrooms are both sources of umami. When paired as seafood and sauce in this recipe, each ingredient lifts the signature flavor of the other.

4	**large shiitake mushroom caps, divided**
1	**teaspoon grapeseed or canola oil plus 2 tablespoons, divided**
3	**tablespoons minced shallot**
2½	**tablespoons dry white wine**
2	**tablespoons champagne vinegar**
¼	**teaspoon ground pepper**
12	**shucked oysters**
	Crushed ice or rock salt for serving
2	**scallions, thinly sliced**
	Lemon wedges for serving

1. Preheat oven to 350°F.

2. Toss 2 mushroom caps with 1 teaspoon oil in a small bowl. Place in a small baking pan and roast until tender, about 10 minutes. Let cool.

3. Meanwhile, thinly slice the remaining 2 mushroom caps. Heat the remaining 2 tablespoons oil in a small skillet over medium-high heat. Cook the sliced mushrooms, stirring occasionally, until golden brown, 2 to 3 minutes. Using a slotted spoon, transfer to a paper-towel-lined plate to drain.

4. Finely dice the roasted mushrooms. Combine with shallot, wine, vinegar and pepper in a small bowl.

5. Place oysters on a bed of crushed ice (or rock salt). Drizzle each oyster with 1 teaspoon of the mignonette. Garnish with the fried shiitakes, scallions and lemon, if desired.

SERVES 4: 3 OYSTERS EACH
CAL 66 **FAT** 4G **CHOL** 15MG **CARBS** 4G **TOTAL SUGARS** 2G **PROTEIN** 3G **FIBER** 1G **SODIUM** 36MG **NIACIN EQUIVALENTS** 1.2MG **VITAMIN A** 92IU

BRING ON THE SIDES

Trimmings and side dishes can take dinner from good to great. These recipes are easy, versatile and tasty.

Crispy Smashed Mushrooms with Gremolata

ACTIVE: 15 MIN **TOTAL:** 40 MIN

Mushrooms get tender in the oven before they're smashed and broiled, creating crispy edges. An herbaceous, bright gremolata completes the dish.

1	pound large mushrooms (12 to 14)
2½	tablespoons extra-virgin olive oil
½	teaspoon salt, divided
¼	teaspoon ground pepper
1	cup lightly packed parsley leaves
1	tablespoon lemon zest
1	small clove garlic, grated

1. Position racks in upper and lower thirds of oven; preheat to 475°F.

2. Wipe mushrooms clean and trim stems flush with caps. Score a ¼-inch X across the cap of each mushroom. Toss the mushrooms, oil, ¼ teaspoon salt and pepper together in a large bowl until the oil is absorbed. Arrange the mushrooms on a large rimmed baking sheet. Roast on the lower rack until browned and very soft, about 20 minutes.

3. Meanwhile, chop parsley. Add lemon zest, garlic and the remaining ¼ teaspoon salt to the parsley on the cutting board and continue chopping until finely chopped.

4. When the mushrooms are done, remove them from the oven and turn the broiler to high. Turn the mushrooms stem-side up in the pan and use the bottom of a mason jar or other sturdy glass to flatten each mushroom. Broil on the upper rack until crisp on the bottom and edges, 3 to 4 minutes. Serve topped with the gremolata.

SERVES 4: ABOUT 3 MUSHROOMS EACH
CAL 107 **FAT** 9G (SAT 1G) **CARBS** 6G **TOTAL SUGARS** 2G **PROTEIN** 3G **FIBER** 1G **SODIUM** 306MG **POTASSIUM** 599MG **NIACIN EQUIVALENTS** 5MG **VITAMIN A** 1265IU

Garlic-Butter Mushrooms

ACTIVE: 20 MIN
TOTAL: 20 MIN

Enjoy these savory mushrooms as a topping for steak or burgers, or on their own as a rich umami side dish.

- **2 tablespoons unsalted butter, divided**
- **1 tablespoon extra-virgin olive oil**
- **1 pound mushrooms, quartered or cut into sixths if large**
- **½ teaspoon ground pepper**
- **¼ teaspoon salt**
- **3 cloves garlic, minced**
- **1 tablespoon chopped fresh flat-leaf parsley**

Heat 1 tablespoon butter and oil in a large skillet over medium-high heat. Add mushrooms, pepper and salt; cook, stirring, until cooked through and starting to brown, 6 to 8 minutes. Reduce heat to medium. Stir in garlic and the remaining 1 tablespoon butter. Cook until the garlic is softened, 1 to 2 minutes more. Remove from heat and stir in parsley.

SERVES 4: ½ CUP EACH
CAL 110 **FAT** 10G (SAT 4G) **CHOL** 15MG **CARBS** 5G **TOTAL SUGARS** 2G **PROTEIN** 4G **FIBER** 1G **SODIUM** 226MG **POTASSIUM** 380MG **CALCIUM** 12MG **IRON** 1MG **MAGNESIUM** 12MG **FOLATE** 21MCG **VITAMIN A** 258IU **VITAMIN C** 4MG

Crispy Portobellos with Marsala Sauce

ACTIVE: 40 MIN **TOTAL:** 40 MIN

The sweetness of Marsala wine pairs nicely with earthy portobello mushrooms, but dry sherry and port are good substitutes. Serve over whole-wheat pasta or mashed potatoes, with a salad.

- **¼ cup all-purpose flour**
- **2 large eggs**
- **½ teaspoon salt, divided**
- **½ teaspoon ground pepper, divided**
- **½ cup panko breadcrumbs**
- **½ cup grated Parmesan cheese**
- **4 portobello mushrooms (about 14 ounces total), stems and gills removed**
- **4 tablespoons extra-virgin olive oil, divided**
- **2 cups sliced shallots**
- **1 teaspoon chopped fresh thyme, plus more for garnish**
- **½ cup low-sodium no-chicken broth**
- **½ cup dry Marsala wine**
- **¼ cup sour cream**
- **Chopped fresh parsley for garnish**

1. Place flour in a shallow dish. Lightly beat eggs and ¼ teaspoon each salt and pepper in another shallow dish. Combine breadcrumbs and Parmesan in a third shallow dish. Coat each mushroom cap in the flour, shaking off any excess. Dip in the egg mixture and let any excess drip off. Then coat in the breadcrumb mixture.

2. Heat 3 tablespoons oil in a large nonstick skillet over medium-high heat. Working in batches if necessary, add the mushrooms and cook until lightly browned, 2 to 3 minutes per side. Transfer to a plate and cover to keep warm.

3. Add the remaining 1 tablespoon oil, shallots, thyme and the remaining ¼ teaspoon each salt and pepper to the pan; cook, stirring occasionally, until browned, 2 to 3 minutes. Stir in broth and Marsala, scraping up any browned bits. Reduce heat to medium and simmer until slightly reduced, about 2 minutes more. Remove from heat and stir in sour cream.

4. Serve the mushrooms topped with the sauce and garnished with parsley, if desired.

SERVES 4: 1 MUSHROOM CAP AND ⅓ CUP SAUCE EACH

CAL 389 **FAT** 21G (SAT 5G) **CHOL** 62MG **CARBS** 34G **TOTAL SUGARS** 12G **PROTEIN** 11G **FIBER** 4G **SODIUM** 480MG **POTASSIUM** 716MG

Roasted Carrots & Mushrooms with Scallion Salsa Verde

ACTIVE: 35 MIN **TOTAL:** 45 MIN

Charred ginger and jalapeño amp up the smoky flavor here, a perfect match for the bright herbs and roasted vegetables.

2 pounds medium carrots, halved lengthwise
10 ounces cremini mushrooms, halved
3 tablespoons extra-virgin olive oil plus ⅓ cup, divided
3 tablespoons champagne vinegar
5 sprigs fresh thyme
5 cloves garlic, crushed, divided
¾ teaspoon salt, divided
1 (1-inch) piece fresh ginger, peeled
1 (1-inch) piece jalapeño, seeded if desired
¼ cup diced yellow onion
1½ cups chopped scallion greens
1¼ cups fresh herbs, such as parsley, cilantro and/or tarragon
2 tablespoons water
¾ teaspoon ground coriander
¾ teaspoon ground cumin
1 cup whole-milk plain Greek yogurt
1 teaspoon caraway seeds, toasted and lightly crushed

1. Preheat oven to 425°F.

2. Toss carrots and mushrooms with 2 tablespoons oil, vinegar, thyme, 4 cloves garlic and ½ teaspoon salt on a large rimmed baking sheet. Spread in an even layer. Roast, stirring occasionally, until tender, about 30 minutes.

3. Meanwhile, chop the remaining garlic clove. Heat a large skillet over medium-high heat. Add ginger and jalapeño and cook, turning occasionally, until charred, 7 to 10 minutes. Transfer to a blender. Reduce heat to medium and add 1 tablespoon oil, onion and the chopped garlic; cook, stirring, until very soft, 1 to 3 minutes. Scrape into the blender.

4. Add scallion greens, herbs, water, coriander and cumin to the blender along with the remaining ⅓ cup oil and ¼ teaspoon salt; process until smooth.

5. Spread yogurt on a serving platter. Top with the vegetables and drizzle with the salsa verde. Sprinkle with caraway seeds.

SERVES 8: ⅔ CUP EACH
CAL 227 **FAT** 16G (SAT 3G) **CHOL** 4MG **CARBS** 17G **TOTAL SUGARS** 8G **PROTEIN** 6G **FIBER** 5G **SODIUM** 319MG **NIACIN EQUIVALENTS** 3MG **VITAMIN A** 1938IU

Braised Winter Greens with Crispy Mushrooms

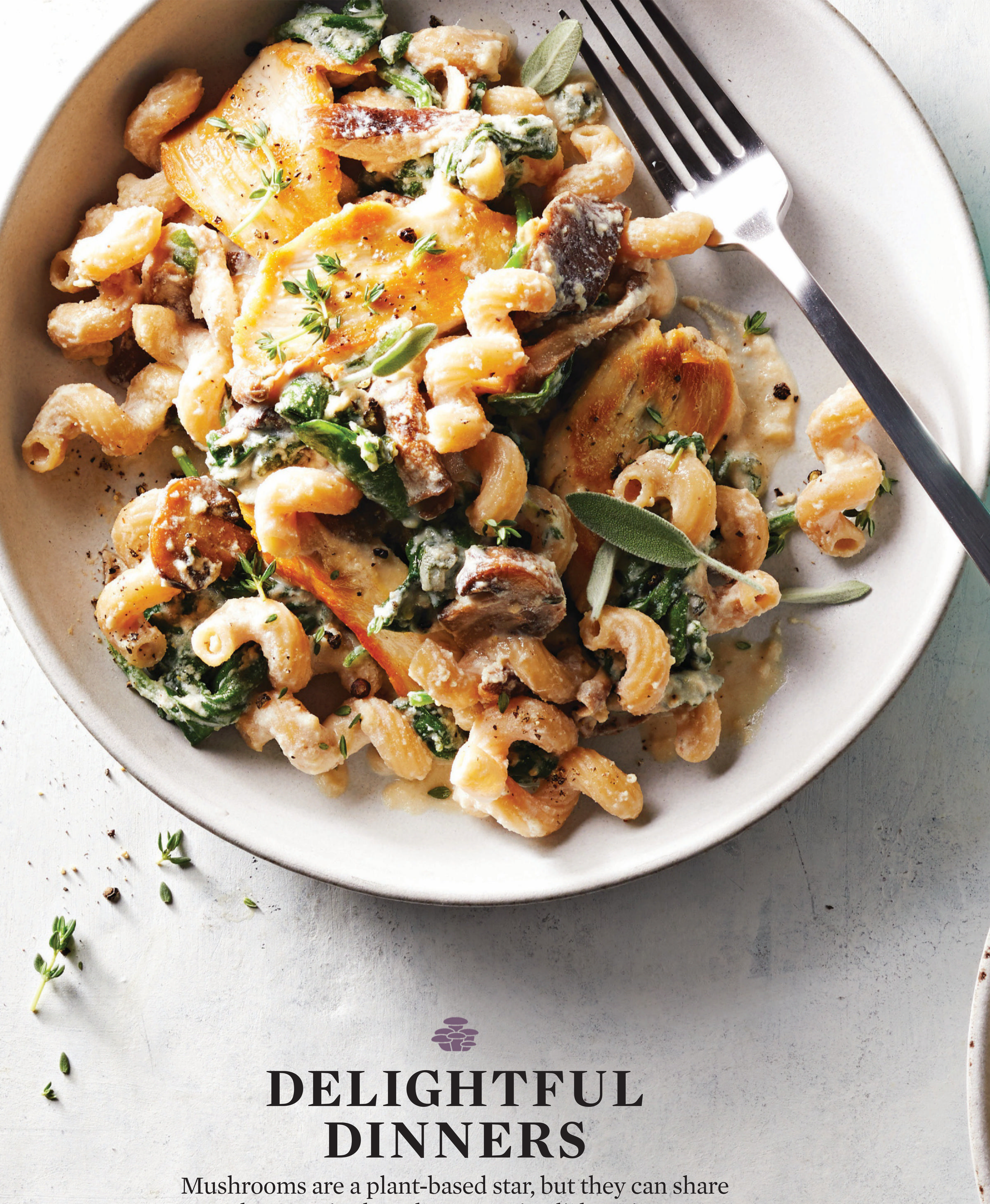
ACTIVE: 45 MIN **TOTAL:** 1 HR 15 MIN

Braised greens are one of the easiest and most nutritious side dishes. Top them with crispy fried mushrooms and they're downright irresistible. Salting the mushrooms helps pull moisture out of them, so they'll fry up crispy. When it's time to get dinner on the table, give them a quick reheat and they're good as new.

8 ounces button mushrooms, sliced
2 teaspoons salt
2 cups canola oil
½ cup rice flour or cornstarch
½ teaspoon baking powder
2 tablespoons extra-virgin olive oil
1 large leek, white and pale green parts only, thinly sliced and rinsed well
3 cloves garlic, minced
⅔ cup low-sodium vegetable or chicken broth
8 cups lightly packed chopped kale
8 cups lightly packed chopped mustard greens
6 cups lightly packed chopped chard
3 tablespoons lemon juice
1½ tablespoons liquid aminos, such as Bragg
½ teaspoon ground pepper

1. Place mushrooms in a colander set in the sink or over a bowl. Sprinkle with salt and toss to coat. Let stand, tossing occasionally, for 30 minutes. Rinse well and gently squeeze to remove as much excess water as possible. Pat dry.
2. Heat canola oil in a large pot or high-sided skillet over medium heat until it reaches 350°F. Set a wire rack on a baking sheet and place near the stove.
3. Whisk flour (or cornstarch) and baking powder in a small bowl. Add half of the mushrooms; toss to coat. Place in a dry colander and shake off the excess flour, then add to the hot oil. Fry until browned and crisp, about 3 minutes. Remove with a slotted spoon, shaking off the excess oil, and arrange in a single layer on the wire rack. Repeat with the remaining mushrooms.
4. Heat olive oil in a large pot over medium-high heat. Add leek and cook, stirring often, until softened, 3 to 5 minutes. Add garlic and cook, stirring, for 1 minute. Add broth and kale; cook, stirring, until wilted, 1 to 2 minutes. Add mustard greens, in batches if necessary; cook, stirring, until wilted, 1 to 2 minutes. Add chard and cook, stirring, until wilted, 1 to 2 minutes more. Stir in lemon juice, liquid aminos and pepper. Transfer the greens to a serving platter and top with the mushrooms.

SERVES 8: ⅔ CUP EACH
CAL 129 **FAT** 9G (SAT 1G) **CARBS** 12G **TOTAL SUGARS** 3G **PROTEIN** 5G **FIBER** 4G **SODIUM** 332MG **NIACIN EQUIVALENTS** 2MG **VITAMIN A** 5211IU



DELIGHTFUL DINNERS

Mushrooms are a plant-based star, but they can share the stage in these hearty main-dish recipes.

Creamy Chicken, Mushroom & Ricotta Pasta

ACTIVE: 30 MIN **TOTAL:** 30 MIN

Ricotta is the key to this creamy pasta dish made without the cream. The cheese melts down along with Parmesan into a luscious sauce, thanks to a little pasta-cooking water. For the smoothest results, use freshly grated Parmesan—pre-grated cheese often contains cellulose that can prevent melting.

8 ounces whole-wheat cavatappi or penne
2 tablespoons extra-virgin olive oil, divided
1 pound boneless, skinless chicken breast, trimmed and thinly sliced
½ teaspoon salt, divided
½ teaspoon ground pepper, divided
8 ounces mixed mushrooms, sliced
3 cloves garlic, minced
2 tablespoons chopped fresh thyme and/or sage, plus more for garnish
¼ cup dry white wine
2 tablespoons lemon juice
1 cup part-skim ricotta cheese
¾ cup grated Parmesan cheese, plus more for garnish
4 cups baby spinach, coarsely chopped

1. Bring a large pot of water to a boil. Cook pasta according to package directions. Reserve 1 cup of the cooking water, then drain.

2. Meanwhile, heat 1 tablespoon oil in a large skillet over medium-high heat. Add chicken and sprinkle with ¼ teaspoon each salt and pepper. Cook, stirring occasionally, until cooked through, 5 to 8 minutes. Transfer the chicken to a plate.

3. Add the remaining 1 tablespoon oil to the pan. Add mushrooms and cook, stirring once, until browned, 2 to 4 minutes. Add garlic, herbs and the remaining ¼ teaspoon each salt and pepper; cook, stirring, until fragrant, about 1 minute. Add wine and lemon juice and cook, scraping up any browned bits, for 1 minute. Reduce heat to medium-low.

4. Mix ricotta and Parmesan in a small bowl and add to the pan along with ½ cup of the reserved cooking water. Stir until creamy. Add the pasta and toss to coat with the sauce, adding more water to thin if needed. Stir in spinach and the chicken. Garnish with more Parmesan and herbs, if desired.

SERVES 4: 1½ CUPS EACH
CAL 578 **FAT** 20G (SAT 7G) **CHOL** 95MG **CARBS** 53G **TOTAL SUGARS** 3G **PROTEIN** 45G **FIBER** 7G **SODIUM** 729MG **POTASSIUM** 832MG

Chicken & Mushroom Marsala

ACTIVE: 30 MIN **TOTAL:** 30 MIN

For the best flavor in this classic one-pan chicken dinner recipe, use real Marsala wine, not the cooking-wine kind. Serve with mashed potatoes.

4 chicken breast cutlets (4 ounces each, about ½ inch thick), trimmed
½ teaspoon ground pepper, divided
¼ teaspoon kosher salt plus ⅛ teaspoon, divided
¼ cup all-purpose flour
3 tablespoons extra-virgin olive oil, divided
8 ounces cremini mushrooms, sliced
8 ounces shiitake mushrooms, stemmed and sliced
½ cup chopped yellow onion
1 teaspoon fresh thyme, plus more for garnish
½ cup Marsala
½ cup unsalted chicken broth
½ tablespoon butter

1. Season chicken with ¼ teaspoon each pepper and salt. Place flour in a shallow dish and dredge the cutlets in it, pressing gently to fully coat.

2. Heat 1 tablespoon oil in a large skillet over medium-high heat until shimmering. Add half the cutlets and cook until lightly browned, 2 to 3 minutes per side. Transfer to a plate. Repeat with 1 tablespoon oil and the remaining cutlets. Cover to keep warm.

3. Add the remaining 1 tablespoon oil and creminis to the pan; cook, stirring occasionally, until tender, 4 to 6 minutes. Transfer to a bowl. Add shiitakes to the pan and cook, stirring occasionally, until tender, 4 to 6 minutes. Transfer to the bowl and season with the remaining ⅛ teaspoon salt.

4. Add onion, thyme and the remaining ¼ teaspoon pepper to the pan; cook, stirring often, until the onion is translucent, 2 to 3 minutes. Return the mushrooms to the pan. Stir in the Marsala and broth, scraping up any browned bits. Simmer over medium heat until slightly reduced, about 2 minutes. Remove from heat and stir in butter. Serve the chicken topped with the sauce.

SERVES 4: 3 OUNCES CHICKEN AND ABOUT ¼ CUP SAUCE EACH
CAL 333 **FAT** 15G (SAT 3G) **CHOL** 67MG **CARBS** 16G **TOTAL SUGARS** 6G **PROTEIN** 27G **FIBER** 2G **SODIUM** 263MG **POTASSIUM** 699MG **CALCIUM** 33MG **IRON** 2MG **MAGNESIUM** 44MG **FOLATE** 40MCG **VITAMIN A** 71IU **VITAMIN C** 2MG

Broccoli, Mushroom & Beef Stir-Fry

ACTIVE: 30 MIN **TOTAL:** 30 MIN

This healthy beef and broccoli stir-fry recipe features a gochujang-soy sauce. Because stir-fries cook up quickly, have all the ingredients prepped and next to the stove before you turn on the heat. Serve over brown rice or rice noodles.

Sauce

- ¼ cup gochujang (Korean hot pepper paste)
- 2 tablespoons lemon juice
- 1 tablespoon grated fresh ginger
- 1 tablespoon soy sauce
- 1 tablespoon dry sherry
- 1 tablespoon toasted sesame oil
- 2 teaspoons sugar

Stir-Fry

- 3 tablespoons peanut oil or canola oil, divided
- 1 pound flank steak, trimmed
- 4 cups 1-inch broccoli florets
- 1 bunch scallions, trimmed and cut into 1-inch pieces
- 3 cloves garlic, minced
- 4 cups sliced mushrooms

1. To prepare sauce: Combine gochujang, lemon juice, ginger, soy sauce, sherry, sesame oil and sugar in a small bowl. Place near the stove.

2. To prepare stir-fry: Heat a 14-inch flat-bottom carbon-steel wok over high heat. (You'll know it's hot enough when a bead of water vaporizes within 1 to 2 seconds of contact.) Add 1 tablespoon oil and swirl to coat. Add steak and stir-fry until just cooked, 2 to 4 minutes. Transfer to a large plate.

3. Swirl in another 1 tablespoon oil; add broccoli and scallions. Stir-fry for 2 minutes.

4. Swirl in the remaining 1 tablespoon oil; add garlic and mushrooms. Stir-fry until the vegetables are tender, 2 to 4 minutes more.

5. Return the steak to the wok. Add the reserved sauce and cook, gently stirring, until well coated and hot, 1 to 2 minutes.

SERVES 4: 1½ CUPS EACH
CAL 341 **FAT** 20G (SAT 5G) **CHOL** 70MG **CARBS** 12G **TOTAL SUGARS** 3G **PROTEIN** 29G **FIBER** 4G **SODIUM** 526MG **POTASSIUM** 914MG **CALCIUM** 93MG **IRON** 3MG **MAGNESIUM** 58MG **FOLATE** 96MCG **VITAMIN A** 2465IU **VITAMIN C** 85MG

Braised Chicken with Mushrooms & Leeks

ACTIVE: 45 MIN **TOTAL:** 55 MIN

The leeks get silky when they cook down in this luscious, tangy mustard sauce. Serve over mashed potatoes.

3 tablespoons grapeseed or avocado oil, divided
1 pound boneless, skinless chicken thighs, trimmed
¾ teaspoon salt, divided
½ teaspoon ground pepper, divided
12 ounces mixed mushrooms, coarsely chopped
2 cups sliced leek (1 medium), rinsed well
2 cloves garlic, minced
2 teaspoons chopped fresh thyme or tarragon, plus more for garnish
3 tablespoons all-purpose flour
3 cups low-sodium chicken broth
2 cups frozen peas
1 tablespoon Dijon mustard

1. Heat 1 tablespoon oil in a large pot over medium heat. Pat chicken dry and sprinkle with ¼ teaspoon each salt and pepper. Add the chicken to the pot and cook until browned on both sides, 6 to 8 minutes total. Transfer to a clean plate.
2. Add the remaining 2 tablespoons oil and mushrooms to the pan and cook, stirring occasionally, until lightly browned, 4 to 6 minutes. Stir in leek and cook, stirring occasionally, until the leek is just starting to soften, about 4 minutes. Stir in garlic and thyme (or tarragon) and cook until fragrant, about 1 minute. Sprinkle the mixture with flour and cook, stirring, for 1 minute more.
3. Add broth, increase heat to high and bring to a simmer, scraping up any browned bits. Adjust heat to maintain a low simmer. Return the chicken and any accumulated juices to the pan, cover and cook until an instant-read thermometer inserted in the thickest part of a thigh registers 165°F, about 10 minutes. Season with the remaining ½ teaspoon salt and ¼ teaspoon pepper.
4. Transfer the chicken to a serving platter. Add peas and mustard to the sauce and cook, uncovered, until the peas are heated through, about 2 minutes. Ladle the sauce over the chicken and garnish with more thyme (or tarragon), if desired.

SERVES 4: 3 OUNCES CHICKEN AND ABOUT 1 CUP SAUCE EACH
CAL 260 **FAT** 13G (SAT 2G) **CHOL** 5MG **CARBS** 28G **TOTAL SUGARS** 7G **PROTEIN** 12G **FIBER** 6G **SODIUM** 632MG **POTASSIUM** 621MG **CALCIUM** 56MG **IRON** 3MG **MAGNESIUM** 52MG **FOLATE** 92MCG **VITAMIN A** 2112IU **VITAMIN C** 18MG

Blue Cheese & Mushroom Pizza

ACTIVE: 40 MIN **TOTAL:** 40 MIN

This sheet-pan technique produces pizza that looks and tastes like it was made in a wood-fired oven. The trick is partially cooking the crust before topping it, then cranking up the broiler to get a golden brown, crispy finish.

All-purpose flour for dusting
1 pound whole-wheat pizza dough, at room temperature
3 tablespoons extra-virgin oil, divided
12 ounces mixed mushrooms, such as oyster, maitake and/or shiitake, sliced (about 8 cups)
½ cup chopped spring onions or scallions
3 tablespoons chopped fresh sage
4 cloves garlic, sliced
2 teaspoons Italian seasoning
¼ teaspoon salt
¼ teaspoon crushed red pepper
½ cup crumbled blue cheese
¼ cup pine nuts, toasted

1. Position racks in upper and lower thirds of oven. Place a large cast-iron skillet on the top rack; preheat to 450°F.

2. Lightly dust a large rimmed baking sheet with flour. Stretch dough to fit the entire pan and brush with 1 tablespoon oil. Bake the dough on the lower rack until the bottom is slightly browned, about 10 minutes.

3. Meanwhile, carefully remove the skillet from the oven and add 1 tablespoon oil, mushrooms and onions (or scallions); stir to combine. Return to the top rack and roast until the mushrooms are slightly browned and tender, 15 to 20 minutes.

4. When both pans are out of the oven, set the broiler to high. In a small bowl, combine the remaining 1 tablespoon oil, sage, garlic, Italian seasoning, salt and crushed red pepper. Spread the seasoned oil over the crust and top with the mushroom mixture and cheese. Place the pizza on the top rack and broil until the cheese starts to brown, 2 to 3 minutes. Sprinkle the pizza with pine nuts. Let stand at room temperature for 5 minutes. Cut into 10 pieces and serve warm.

SERVES 5: 2 SLICES EACH
CAL 383 **FAT** 22G (SAT 4G) **CHOL** 10MG **CARBS** 41G **TOTAL SUGARS** 3G **PROTEIN** 12G **FIBER** 3G **SODIUM** 516MG **POTASSIUM** 439MG **CALCIUM** 104MG **IRON** 1MG **MAGNESIUM** 31MG **FOLATE** 31MCG **VITAMIN A** 263IU **VITAMIN C** 3MG

Grilled Beef-Mushroom Burgers

ACTIVE: 1 HR **TOTAL:** 1 HR

The secret to this super-juicy grilled burger? Sautéed mushrooms cooked with a little smoked paprika, garlic powder and sherry vinegar are mixed in with the beef.

1	pound cremini mushrooms, halved if large
3	tablespoons extra-virgin olive oil, divided
5	tablespoons sherry vinegar, divided
2½	teaspoons smoked paprika, divided
2	teaspoons garlic powder
⅛	teaspoon salt plus ½ teaspoon, divided
	Pinch of sugar
2	cups sliced cucumber
6	tablespoons mayonnaise
2	teaspoons tomato paste
2	pounds lean ground beef
8	ounces piquillo or Padrón peppers
6	ounces thinly sliced Manchego cheese
8	brioche buns, split and toasted
	Greens, red onion and tomato

1. In batches, pulse mushrooms in a food processor, scraping down the sides once or twice, until finely chopped.

2. Heat 2 tablespoons oil in a large pot over medium-high heat. Add the mushrooms and cook, stirring occasionally, until browned and the liquid has evaporated, 5 to 7 minutes. Add 4 tablespoons vinegar, 2 teaspoons paprika and garlic powder. Cook, stirring, for 3 minutes. Scrape into a large bowl and spread into a thin layer. Let cool for 10 minutes.

3. Meanwhile, combine the remaining 1 tablespoon vinegar, ⅛ teaspoon salt and sugar in a small bowl. Add cucumbers and toss to combine. Combine mayonnaise, tomato paste and the remaining ½ teaspoon paprika in a small bowl. Set the cucumbers and aioli aside.

4. Preheat grill to medium-high.

5. Add beef and the remaining ½ teaspoon salt to the mushrooms. Mix well. Form into 8 equal patties, about 4 inches in diameter. Toss peppers with the remaining 1 tablespoon oil in a medium bowl. Transfer to a grill basket.

6. Oil the grill rack. Grill the burgers, flipping once, until an instant-read thermometer inserted in the thickest part registers 155°F, 8 to 10 minutes total. Grill the peppers, stirring occasionally, until browned, 5 to 8 minutes total.

7. Top the burgers with cheese and cook until melted, 1 to 2 minutes more. Serve the burgers on buns with greens, onion, tomato, the peppers, cucumbers and aioli.

SERVES 8: 1 BURGER EACH
CAL 695 **FAT** 39G (SAT 15G) **CHOL** 143MG **CARBS** 49G **TOTAL SUGARS** 8G **PROTEIN** 37G **FIBER** 5G **SODIUM** 884MG **POTASSIUM** 673MG

EatingWell

Mushrooms

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Small Bites, Big Benefits

Mushrooms are rich in antioxidants. Cooked or raw, they contain selenium, which isn't found in most fruits or vegetables. According to the National Institutes of Health, selenium is a powerful antioxidant thought to prevent certain types of cancer, cardiovascular disease, cognitive decline and thyroid disease. Mushrooms are considered essential for healthy aging, as they prevent cognitive decline and oxidative stress. Research shows that people who consume higher amounts of antioxidants have a lower incidence of neurodegenerative diseases. And you only need to eat about five button mushrooms a day to reap the full nutritional benefits.
—Lauren Wicks; reviewed by Maria Laura Haddad-Garcia

White button mushrooms have high levels of riboflavin, which is important for energy production.

Savory, Unique, Nutritious

Mushrooms can help fight disease and support healthy aging. With more than a dozen distinct types, they are versatile and tasty staples in any kitchen.

Cremini mushrooms deliver fiber, which aids in digestion.

Shiitake mushrooms are rich in compounds that can help support a healthy immune system.